

910.5  
S57b

# SIERRA CLUB BULLETIN

VOLUME XI



NUMBER 2

SAN FRANCISCO  
JANUARY  
1921

PUBLICATIONS OF THE SIERRA CLUB  
NUMBER FIFTY-SIX

# SIERRA CLUB BULLETIN

FOUNDED 1892

PUBLISHED ANNUALLY FOR THE MEMBERS

JANUARY, 1921

Vol. XI

## CONTENTS

No. 2

Plate XXXII. Mount Huxley	<i>Frontispiece</i>	
	PAGE	
NO TRESPASSING!	<i>John Barton Payns</i>	117
COLBY PASS AND THE BLACK KAWEAH	<i>James S. Hutchinson</i>	118
Plates XXXIII, XXXIV, XXXV, XXXVI, XXXVII		
THE 1920 OUTING: HEADWATERS OF THE SAN JOAQUIN		
AND THE KINGS	<i>Marion Randall Parsons</i>	136
Plates XXXVIII, XXXIX, XL, XLI, LVI, LVII, LVIII, LIX, LXIII		
FIRST ASCENT OF MOUNT HAECKEL	<i>Walter L. Huber</i>	144
Plates XLII, XLIII		
FIELD NOTES OF THE 1920 OUTING	<i>Elizabeth Van E. Ferguson</i>	147
Plates XLIV, XLV		
THE LONG-LOST CARPENTERIA	<i>Willis Linn Jepson</i>	151
Plates XLVI, XLVII		
GLENORA MOUNTAIN: A REPETITION OF MUIR'S		
CLIMB OF 1879	<i>E. Mallinckrodt, Jr.</i>	154
Plates XLVIII, XLIX		
ASCENT OF MOUNT MORAN, GIANT OF THE TETONS	<i>LeRoy Jeffers</i>	161
Plates L, LI		
YOSEMITE NATURE GUIDES	<i>C. M. Goethe</i>	167
Plates LII, LIII		
THE CAMPAIGN FOR PRIVATE FORESTRY	<i>Donald Bruce</i>	171
Plates LIV, LV		
THE 35TH DIVISION IN THE VOGES MOUNTAINS	<i>Col. N. F. McClure</i>	175
STUDIES IN THE SIERRA	<i>John Muir</i>	181
VII.—MOUNTAIN-BUILDING		
ORGANIZATION OF THE SIERRA CLUB		194
EDITORIALS		195
REPORTS OF COMMITTEES		197
NOTES AND CORRESPONDENCE		203
Plates LX, LXI, LXII		
NATIONAL PARK NOTES		212
FORESTRY NOTES		219
BOOK REVIEWS		224

Correspondence concerning the distribution and sale of the publications of the Club, with reference to advertising rates and space location, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 402, Mills Building, San Francisco, California.

PRICE, 75 CENTS PER COPY

Printed by Taylor & Taylor, San Francisco

D. 2

acc

acc

17

18

36

44

7

1

4

1

7

1



MOUNT HUXLEY  
Photo by Walter L. Huber



# SIERRA CLUB BULLETIN

VOLUME XI



NUMBER 2

SAN FRANCISCO

JANUARY

1921



## NO TRESPASSING!

By

JOHN BARTON PAYNE, *Secretary of the Interior*

*No other country in the world has such wonderful national parks as our own. To persons who know the health, recreation, and pleasure afforded to the people by these permanent breathing-places, filled as they are with natural objects of the greatest interest and with wild animals, birds, and flowers, it would seem that the American people should insist that they be permanently preserved, free from every form of commercialization.*

*To me it is perfectly plain that the wise course for the Government is to hold that when a national park is once set aside it shall remain the property of the whole people forever, and shall not be trespassed upon by any business or commercial use. Unless this policy is followed, encroachment will ultimately impair, if not destroy, our national parks.*

*The argument of utility should not be entertained. Indeed, it can nearly always be met by the plain statement that the water sought for reclamation and power purposes does not remain imprisoned in the parks but may be utilized after it flows from them.*

## COLBY PASS AND THE BLACK KAWEAH

BY JAMES S. HUTCHINSON



OF many factors which determined for us the region for our summer's outing, there were three outstanding ones: *First*: Mr. McDuffie had assembled for the trip a most congenial and delightful party, and had told us of the beauties and charms of Roaring River Basin and the Kaweah Peaks country. *Second*: It is eight miles, as the crow flies, from the Whaleback in Cloudy Cañon across the Great Western Divide to Junction Meadow on the Kern; it is sixty-five miles by the shortest trail between these same points (via Turtle and Black Rock passes); it is seventy miles by the next shortest trail (via Kings Cañon, Bubbs Creek, and Shepard Pass). Mr. Colby had said that, from the lay of the land, a pack-train ought to go straight across and save two days between the Kings and Mount Whitney.\* *Third*: On many occasions, from the vicinity of Brewer, I had viewed the Kaweahs—ragged and savage peaks, dominated from every viewpoint by the unclimbed Black Kaweah. There were plenty of other inducements, but what more were required?

Our party† gathered at Giant Forest on July 16, and there was met by our pack-train, in charge of Ernest E. McKee, with Onis Imus Brown assistant packer and cook. Later during the trip we were to be joined by three other members.‡ Before leaving the forest we climbed Moro Rock and there obtained that most wonderful view of the Kaweah region and the Great Western Divide, and, through the notch at the head of Deer Creek (10,700 feet), the lowest saddle north of Coyote Pass, got our first view of the Black Kaweah—in the sunset light looking fierce, threatening, and defiant.

On the morning of July 18 we left for Roaring River, taking the "J. O." Pass trail and stopping over at Clover Creek for a trip to Twin Lakes. Some of the party ascended Silliman, the most prominent peak of the Silliman Crest and one commanding a broad and

\* See SIERRA CLUB BULLETIN, vol. IX, No. 1, page 3.

† Mr. and Mrs. Duncan McDuffie, Mrs. William Knowles, Mr. F. C. Torrey, Mr. Charles A. Noble, Mr. Charles A. Noble, Jr., Col. W. H. Williams, Mr. J. S. Hutchinson.

‡ Mr. and Mrs. Arthur Elston, Mr. Vernon Kellogg.

extended view of the Great Western Divide. Again, from here, the Black Kaweah was the most dominant peak in the whole horizon.

Upon arriving at Roaring River we found Mr. and Mrs. Ralph Merritt in a beautiful camp just above the bridge. We established our camp a mile above them, in Cloudy Cañon, a short distance above the junction of Deadman\* (elevation, 7600 feet). From this point it is possible to make many delightful side-trips—Moraine Meadow, Avalanche Pass, Sphinx Lakes, Josephine Lake, Sentinel Dome, Mount Brewer, etc. Another trip which I would suggest, but I am not sure that it can be made, is along Glacier Ridge—a wonderfully glaciated ridge dividing Cloudy and Deadman cañons.

One very fine trip which should not be missed is up Deadman Cañon. We wished to explore this cañon with some degree of care, and so decided to take our pack-train and spend one night at its upper end. In this cañon are a number of beautiful meadows filled with wonderful wild flowers. After traveling for an hour you come to the grave of a French sheep-herder, murdered there in 1887. It is this grave which gives the cañon its name. Our camp was made in an ideal spot, on a glacial bench, with a wonderful outlook in all directions and near a point where the stream comes tumbling down from Bird (or Dollar) Lake. That night, long after dark, we were delighted by a most unexpected visit from Mr. Le Conte, who dropped in on us from Horse Corral Meadow.

The next morning some of the party returned with the packs to our Cloudy Cañon camp, while the rest ascended to the head of Deadman and crossed Glacier Ridge into the headwaters of Cloudy Cañon. From near the head of Deadman, looking back, one obtains a view of the finest U-shaped glacial cañon in the Sierra. The view as you cross the ridge into Cloudy Cañon is most impressive, for you have the Great Western Divide from Brewer to Sawtooth laid out distinctly before you. We were particularly absorbed with the stretch from Milestone to Triple Divide, because we knew that somewhere there—just where we could not tell—lay the saddle which Mr. Colby believed to be passable.† The saddle between Triple Divide and the next peak north—a very red mountain—looked best, but we knew it was not the place we were after.‡

\* Much confusion has arisen over the names of these cañons. The original Tehlupite sheet has the names correct—that is, Deadman Cañon to the west and Cloudy Cañon to the east. On the more recent sheets the names are incorrectly given, the western cañon being called Copper and the eastern Deadman.

† See SIERRA CLUB BULLETIN, vol. IX, No. 1, page 2.

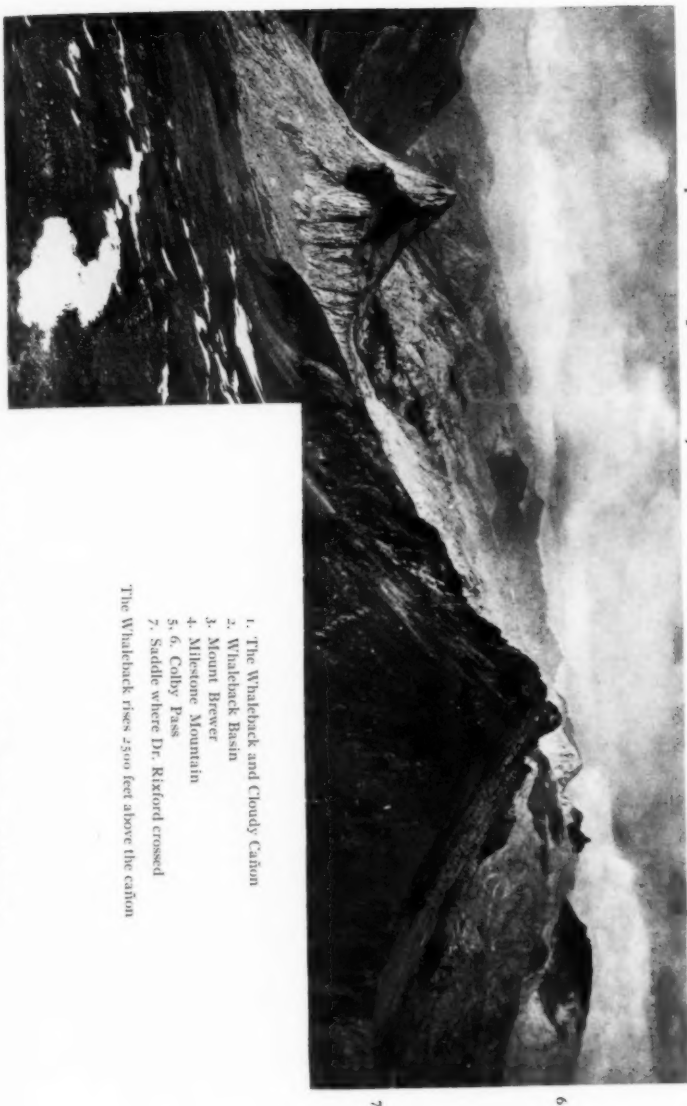
‡ See SIERRA CLUB BULLETIN, vol. VIII, No. 3, page 167.

Mr. Merritt had told us that Dr. Rixford with a party of five had disappeared up Cloudy Cañon about ten days before, incidentally looking for Colby Pass. As the party had not returned, he surmised that they had gotten out of the cañon, possibly over that pass. While we were at our point of vantage on Glacier Ridge we chanced to notice across a snow-field just below us, on the Cloudy Cañon side, rather fresh hoof-prints. Following these we found they led, by a very steep and rough trail, to Miner's Pass and then along the ridge westward to the Elizabeth Pass of Stewart Edward White. Of course, we did not know whose tracks these were, but immediately thought of the Doctor's party. At this point we had reached our nearest approach thus far to the Black Kaweah, four miles distant, and it certainly appeared a rough and treacherous peak—sheer walls across the whole northern face, and its knife-edge scarred and broken by great clefts.

From Miner's Pass it was a long descent of 4700 feet and a long distance back to our Cloudy Cañon camp, going, as we did, the whole length of Cloudy Cañon; but the trip was full of inspiring views and points of interest. To see the Whaleback alone is worth a long trip into the region. It was just dusk when we reached camp, quite fatigued; but a very excellent dinner, culminating with one of Mrs. Knowles' celebrated tapioca puddings, was the end of a perfect day.

From our observations taken when crossing Glacier Ridge, we knew that Colby Pass could be reached only by first getting into a large basin east of the Whaleback. Accordingly, on July 31, we moved to Upper Cloudy Camp (elevation, 9100 feet), at a meadow just west of the north end of the Whaleback. Merritt had told us that sheep had recently been over a new trail leading eastward out of Cloudy Cañon half a mile or so north of Whaleback Creek. McDuffie followed this and found that it led up toward Table Creek, and not into the Whaleback Basin. He thereupon cut across an intervening ridge, southward, and followed up Whaleback Creek until he looked into the basin. Returning, he reported signs of very old sheep-trails here and there on the northern end of the Whaleback, but nothing continuous.

During the afternoon Brown and I explored all across the northwestern shoulder of the Whaleback. The whole slope was dotted with misleading monuments leading in all directions. After a very



1. The Whaleback and Cloudy Cañon
2. Whaleback Basin
3. Mount Brewer
4. Milestone Mountain
- 5, 6. Colby Pass
7. Saddle where Dr. Rixford crossed

The Whaleback rises 2500 feet above the cañon

FROM TRIPLE DIVIDE PEAK—LOOKING NORTH ALONG THE GREAT WESTERN DIVIDE.  
Photo by J. S. Hutchinson



COLBY PASS FROM THE WEST  
The unmapped lake is in the foreground  
Photo by J. S. Hutchinson



COLBY PASS FROM THE EAST  
Taken from lower end of Milestone Bowl  
Photo by J. S. Hutchinson

long search, a way through was found, but there was one terribly bad place where a trail must be constructed. We then went up into the Whaleback Basin. The route first followed up a rather narrow cañon near the stream, then crossed to the north side, went over some projecting buttresses, and afterward, descending, crossed through some willows to the south side. Here the walls recede and the country opens into a large-sized basin with a fair meadow. There are no trees except on the north and northeast sides of the basin. We explored for a possible camping-place, and located one, tentatively, on a glacial shelf about 200 feet above the meadow, on the north end of the basin, beside a stream which comes down from the north. We then returned hurriedly to the bad place in the trail. It certainly was bad. After working at it for a couple of hours, I asked Brown if he would get the animals through, to which he made one of his favorite and characteristic replies: "There ain't nothin' holdin' me back, is there?" Just below this place a large dead tree blocked the only possible route, and this would have to be cut out on the following morning. Upon reaching camp and reporting progress, there was much rejoicing, for all knew that if a camp was established in the Whaleback Basin we could readily explore every saddle, crack, and notch in the ridge for a way across.

The bad place referred to was like a zigzag stairway, very steep indeed, and up a rocky chute, or chimney. At first there was a straight stretch upward about thirty feet, close beside a rocky wall; then an abrupt turn back for fifteen feet up to a little ledge; then another abrupt turn of twenty feet, with a final jump-up of three feet over a slippery rock. The turns were so short that the animals could barely make them, and extreme care had to be exercised to prevent their stepping off into space. The packs were not heavy, for at least half of our outfit had been left at our permanent camp. McKee and Brown were supervising the ascent and asked me to make a try-out with one of our best mules, a spirited animal. Taking the lead-chain, I started up the stairs. The pack was not wide, but halfway up the first stretch it struck the rock-wall; the mule lost his balance and started over backward. I braced myself for the shock, but was jerked completely off my feet. The poor mule landed on top of his pack in the rocks at the foot of the stairs. We removed the pack and tried again with only the saddle on, McKee taking his turn at leading, but the animal had lost his nerve and in a moment



was again on his back at the bottom. No damage, however, was done, except a broken saddle. By this time the mule was trembling like an aspen-leaf, and we turned him loose, with the idea of taking him up the following day. Next we tried one of the best horses, and in an instant he was lying on his back in the rocks, the pack under him and his legs pointing upward. Only one animal made the ascent with his pack. A second one got halfway up and then was unpacked. In every instance, at the last stretch, the animals were steadied with ropes about their necks, for fear they would turn over, an act which would have been absolutely fatal. The mule which made the first attempt, in ten minutes after the incident, had forgotten all about his troubles, was searching for the choice morsels of grass growing in the rocks, and when all the others had gone up went through without difficulty.

Above this stairway is a small flat area, where we repacked, and by two o'clock we were in camp on the glacial shelf at the north side of the Whaleback Basin (elevation, 10,000 feet), a wonderfully beautiful spot in a grove of trees beside a fine stream (a small branch of the main stream), the water plunging down in beautiful little cascades and waterfalls, interspersed with fine little pools, and surrounded by an innumerable variety of wonderful wild flowers. From this shelf we could look south up the full length of the Whaleback Basin and southwest across the meadow to the knife-edge crest of the Whaleback—from beginning to end a succession of weird-looking gargoyles, pinnacles, and spires, particularly noticeable as the rays of the declining sun shone through and across them.

The afternoon was spent in exploring up a ridge which bounds the Whaleback Basin on the northeast. From this ridge we got a good view of Milestone and of the great cirque described by Mr. Colby, also of a long stretch of the crest line; but even now, with powerful glasses, we deliberated long and earnestly as to which was the real pass. We looked down on an unmapped lake, a beautiful sheet of water, two-thirds of a mile in length by one-third in width. Colby had questioned the possibility of getting around its shores; so from our point of vantage we examined carefully with the glasses the north shore of the lake. It appeared to be impassable—a smooth granite buttress, about midway along, extending from the cliffs above out into deep water. Possibly one could get around by climbing up 500 feet over the buttress. On our return trip to camp we



followed the southern shore of the lake, starting at its eastern end. By very careful maneuvering one could take animals around the southern shore, with the exception of just one place near the eastern end, where a huge rock-slide has come down, blocking the route for one hundred yards or more.

That night it was decided that on the following day we would explore afoot up to the alleged pass to see how far the animals could be taken. Brown and McKee would take their horses as far as possible. These two men had entered into the quest for a pass with great zeal and enthusiasm. McKee's brother Earl had been up the Kern-Kaweah on foot to a point not far from the pass, and Ernest wished to connect up with his brother's trail. Brown was always in for trying anything once—the more difficult, the better. He had never been in the Kern and wanted to get there. The idea of opening a new route appealed to their imagination.

Having explored the south side of the lake the day before and found it impassable, we took the north side. Those on foot had reached the middle of the north shore when the horsemen arrived, having ridden all the way from camp. So far, so good. Then came the slick buttress running down into deep emerald waters. A steep cleft choked with boulders ran a little way up the slope to a horizontal shelf five feet wide, which in turn ran fifty yards clear across the buttress. Brown and McKee immediately set to work to remove the boulders from the choked cleft, and in a short time had their horses on the shelf. From here the traveling across the buttress was comparatively easy. This shelf is the only possible route around the shore of the lake.

A short distance beyond the shelf is an extensive willow thicket, watered by many little branches of a stream which tumbles down from a good-sized lake above. McKee plunged through this on his horse, following the remnants of an old circuitous sheep-trail. Brown rode his horse along the shore-end of the thicket, on a shelf in the lake, the water reaching up to the stirrups.

The course from here is up a small rather rocky gorge, with here and there signs of an old sheep-trail. Farther along the way leads into an extensive rock-pile, and it took Brown and McKee some little time to work their way through. Above the rock-pile the country flattens considerably and opens into a narrow alpine valley, with tiny streams running through mossy banks. Here and there were a

few scattered albicaulis. The alpine valley leads directly to the base of the last steep rocky ascent. This ascent rose probably 1000 feet in elevation to the supposed pass, and for the whole distance lay at an angle of forty degrees. The way was up a broad chute 300 feet in width, bounded north and south by rocky walls, gradually converging as they neared the saddle. The forty-degree slope was composed of rocks and boulders of all sizes, scattered about promiscuously and all imbedded in loose granite, gravel, and sand. In a few places patches of snow lay in the chute.

Those afoot ascended rapidly, using here and there the remnants of an old sheep-trail which had withstood the ravages of slides and weathering, looking back now and then to see how the horsemen had progressed. Each time we could see that they were coming steadily on. An hour's climb brought us to the summit (12,000 feet), and for the first time we knew it was the pass. It lies about one and a half miles from Milestone and is the first real saddle southwest of that mountain. It is about three miles in a straight line southeast of the northern end of the Whaleback. By our trail it is about five. The east side was an easy, gentle slope down toward Milestone Bowl,\* and then on down to the cañon of the Kern-Kaweah. The pass once gained, the rest would be easy. We all waited at the pass for an hour, enjoying the view and watching the men as they built stretches of the trail and then moved their horses gradually upward. They moved, slid, and rolled tons and tons of rocks. None was too large for them to tackle. Sometimes a small avalanche would go sweeping down, perhaps carrying away portions of the trail already built by them. They were as strong as giants, and the high altitude seemed to make little difference in their energy. Someone jokingly remarked that the topographical maps would have to be altered to meet the changed conditions wrought by these assiduous trail-builders.

After watching the trail-workers for an hour or more, until the men were perhaps one-third of the way up the slope, the members of the party decided to return to camp. I remained to lend encouragement to the trail-builders, assisting as best I could, and frequently taking photographs as the work progressed. Little by little the horses were gotten nearer and nearer the pass—now twenty-five feet, now fifty or even one hundred feet at a stretch. At exactly 1:25

\* Not "Bow." See *SIERRA CLUB BULLETIN*, vol. II, No. 3, page 188.

we reached the pass and heard from far in the distance a mighty shout. Our party at the lake far below had been watching with glasses as the advance was made up the rocky slope.

From the pass to Junction Meadow (via the Kern-Kaweah) the way was open. Professor Dudley had brought animals up the stream.\* Abernathy had been up to the pass with burros.† Earl McKee had been up from the Kern afoot, and had reported the going fairly good, except at the lower end of the river, where packs must be carried a short distance. The only question remaining was: Could the pack-animals be brought up the last thousand feet to the pass? Our saddle-horses had been led up, but could the pack-animals navigate the same trail? There were two particularly bad places in this slope—one, where a large boulder projected into the trail so that the stirrups struck in passing; the other, where two large boulders came together too close for the packs to pass.

The return to our camp at the Whaleback Basin took about two hours. Reaching there we found that McDuffie had returned down Cloudy Cañon to our main camp to greet our newcomers and to escort them up to the basin camp the following day. He left word that we should decide whether the pass should be attempted with the packs. That night around our rousing camp-fire we discussed the advisability of the attempt. The unanimous vote was "Yes."

What is more glorious than these evenings in camp?—the twilight fading into dark, and then the utter darkness beyond the camp-fire's glow; the absolute stillness, save for the crackling fire with its myriads of firefly sparks; the murmuring brook near by; now and then the crash of a rock from the Whaleback cliffs across the meadow; then there are good friends gathered in the camp-fire's genial warmth, listening as Mrs. McDuffie reads thrilling tales of James Capen Adams, mountaineer and grizzly-bear hunter, Clarence King, and other wild tales of adventure;—the fire dies to glowing coals, and as the moon rises over the great wall of the Western Divide, flooding the basin with soft, mellow light, each one seeks his tamarack bedchamber for a peaceful sleep, to dream of untrodden trails, unpassed passes, and unknown Kern-Kaweahs beyond. At such times, truly "All's well with the world."

The next morning at daybreak McKee and Brown were off with

\* See SIERRA CLUB BULLETIN, vol. II, No. 3, p. 188.

† See SIERRA CLUB BULLETIN, vol. IX, No. 1, p. 3.

the pack-animals, headed for our lower camp, and the men of the party were to meet the pack-train near Cloudy Cañon upon its return and help over the difficult place at the stairway. Colonel Williams and I returned to the rough place and did some further work on the staircase. We also spent more than an hour exploring all over the face of the slope for a possible way around. Many times we thought we had found it, but inevitably were led to some smooth granite slope where only blasting would make a trail. We then carefully monumented a good route all the way down to Cloudy Cañon, and on the east side of the crossing placed a pile of stones on a large boulder. The crossing is at the northern end of the meadow, just at the edge of the timber.

McDuffie, with the Elstons and Vernon Kellogg, reached our Upper Cloudy Camp at five o'clock, and shortly the pack-train arrived. By 5:45 we were at the staircase. Getting the packs and animals beyond this took until eight o'clock. While repacking darkness overtook us and it commenced to rain.

We had sent our new arrivals ahead, giving them the general direction and the location of our camp, telling them that they should be in camp by seven o'clock. After repacking, we followed, going fairly rapidly until we reached the lower end of the Whaleback Basin. By this time it was pitch dark. In the daylight it was easy going, winding here and there in serpentine fashion through the rocks and by the meandering stream flowing deep in mossy banks, here and there twisting and turning between boulders thrown down from the cliffs of the Whaleback. For a time the flash-light aided us, but soon the maze became so complicated that we were completely tangled up and had to retrace our steps many times and start anew. It was a most exasperating experience, for we kept falling into the stream and getting into pockets where the horses could not proceed. The lights of several camp-fires were seen on the shelf above, and we could hear the shouts of those in camp; but to get through the inky blackness and over the uneven and uncertain meadow was desperate sort of work.

At 9:30 McDuffie and I led the last of the pack-train into camp, feeling that the day's real labors were ended. As we approached we heard a shout from out the darkness of the meadow below, only to find that our newcomers had not arrived, but were lost in the darkness of the region below. A warm welcome! We got the flash-

light and lanterns, and by continual calling and signaling located our friends among the rocky talus on the opposite side of the meadow.

By 10:30 our friends were welcomed to a roaring camp-fire, and, after getting into dry garments, we all partook of a hearty and much-relished dinner. We then sat about the camp-fire and listened to all the latest news, read very welcome letters, and shortly after midnight retired. As the camp-fire died down the whole of the Whaleback Basin was lighted by the glow of the full moon, making a weird and strange sight.

The next morning, after a late breakfast, we laid our plans for the day. The camp should be moved up to the north shore of the uncharted lake, and McKee and Brown would take some of the pack outfit up to the pass and cache it, thus lightening the load for the final ascent to be made the succeeding day.

Triple Divide Peak—a peak well and attractively named—thrust its head up above the tail of the Whale at the southern end of the basin, plainly visible from our bench camp. We knew that the view from that peak would be well worth while, so the two Nobles and I decided upon the climb and planned to join the rest of our party at the new camp at the lake above. In the clear mountain atmosphere the peak looked close at hand and as though it could be reached in a bee-line up the Whaleback Basin, across the tail of the Whale, and thence across an intervening depression. It was a long climb to the crest of the tail, and then to our consternation we were standing on 400-foot cliffs impossible of descent. As a result, we had to veer to the east away from our bee-line course, climb over the top of the red peak lying northeast of Triple Divide, go down to the saddle between the two peaks, and then by the Triple Divide knife-edge climb to the summit—a long, arduous trip, but worth many times the exertion required to make it. A snowball which I crushed on the topmost point went part into the Kern, part into the Kings, and part into the Kaweah. At our very feet to the west was the source of the Kaweah River, which in a distance of twenty-five miles descends nearly 12,000 feet to Three Rivers, at an elevation of 800 feet, making probably the quickest and most rapid descent of any of the streams on the western slope of the Sierra.\*

\* See "The High Sierra of California." By Professor JOSEPH N. LE CONTE, in *Alpina Americana*, Number 1. Published by the American Alpine Club. 1907.

At the saddle, between Triple Divide and the red peak, we found foot-prints and a handkerchief filled with roots. Robinson Crusoe is not more surprised at Friday's prints in the sand. Had Dr. Rixford crossed here?—and, if so, where had he gone?\*

Returning from Triple Divide, we took a direct course toward the west side of the Whaleback, climbed a talus-slope up the tail of the Whale to a low notch, descended into the Whaleback Basin, and came to the unmapped lake. It was late when we came over a boulder just before reaching the lake. The alpenglow cast a glorious pink over the Great Western Divide before us and brought out in great detail the pass for which we were headed on the morrow. Young Noble, a good climber full of energy, had led the trip practically all day and was ahead. Suddenly he shouted: "They're at the pass!" Sure enough, high up on the rocky slope below the pass, we could faintly see Brown and McKee with the tiny pack-animals moving slowly upward. Now and then they would stop for further trail-building. Finally they reached the two projecting rocks of which I have spoken as too close for the packs to pass, and shortly, through the glasses, we saw them unpacking and caching the outfit. Just at dusk they started down, and in half an hour (an incredibly short time for the distance), just as darkness had settled, rode into camp, on the north side of the lake. (Elevation, 10,500 feet.)

Plans were made for an early start. The packers said it would be necessary to build the trail in the two places where boulders obstructed the packs. Accordingly, early the next morning Williams and I started ahead with shovel and mattock to make the places passable. In an hour we were at work and kept it up steadily for two hours, filling in and raising the trail between the two closely converging rocks so that the packs would clear them, and building around the other projecting boulder. At 10:15, looking far down, we could see the pack-train just leaving the lake. At 12:45 thirteen people, nine pack-animals, and four saddle horses stood on Miner's Pass amid great rejoicing. After a delightful luncheon, with gooseberry sherbet as a dessert, a monument was built and in it Mr. Rixford deposited the following record:

*NOTE.*—Since returning home, Dr. Rixford tells us that he crossed here, carrying his traps to the saddle, and then descended a thousand feet to a lake on a shelf high above Kern-Kaweah. Here his way was blocked by some cliffs and he was forced to camp, without feed for his burros and no fuel larger than gooseberry bushes. He thinks a trail could be found, but in his limited time could not work it out. The next day he returned the same route and left Cloudy Cañon by Miner's Pass. It was his tracks we had seen when on Glacier Ridge.







**COLBY PASS, BLACK KAWEAH  
AND VICINITY.**

Scale  
CHINSON, DEC. 1920





August 5, 1920.

*This pass was crossed from the Roaring River side, today, by a party of thirteen persons with thirteen animals (four saddle animals and nine pack animals). The pack train was in charge of Ernest E. McKee of Badger and Onis I. Brown of Lemon Cove. There was no trail nor any indications of the previous passage of animals over the pass, except for the traces of a sheep trail. A trail was worked out by the packers and some members of the party in about eight hours, on August 4 and 5. The passage was made without accident to any animals. The members of the party were:*

*Mr. and Mrs. Duncan McDuffie, Berkeley, Cal.*

*Mr. and Mrs. Arthur Elston, Berkeley, Cal.*

*Mrs. Wm. Knowles, Oakland, Cal.*

*Mr. James Hutchinson, Berkeley, Cal.*

*Col. W. H. Williams, Oakland, Cal.*

*Mr. Chas. Noble, Berkeley, Cal.*

*Mr. Chas. Noble, Jr., Berkeley, Cal.*

*Mr. Fred Torrey, Berkeley, Cal.*

*Mr. Vernon Kellogg, Stanford University.*

From the pass to the Kern-Kaweah River a fairly well-monumented trail follows down the north branch of that stream. The pass itself is level for fifty yards; then comes a gradual slope to the lower end of Milestone Bowl. Continuing, it leads through a fine alpine meadow in a hanging valley particularly fine, for all the way you have the wonderful snow-clad northern slope of the Kaweah Range right before you. Then you reach the forested area. As any course is here possible, we plunged down into the cañon and camped in a beautiful spot on the river just above Gallats Lake and below a large meadow with the stream meandering through it. (Elevation, 10,000 feet.) That night we celebrated with a grand repast and called it "The Feast of the Colby Passover"—and McDuffie was our Moses leading the Exodus into the Promised Land.

The next morning four of our party—Elston, Williams, and the two Nobles, who had pressing engagements at home—left us amid expressions of great regret from everyone. We all had planned to move down on the same day, but the most wonderful fishing that ever was induced the rest of us to remain a day longer. The Kern-Kaweah has had a perpetual closed season, being closed at its western end by the precipitous walls of the Great Western Divide

and at its eastern end by the boulders in what Professor Dudley called the Kern-Kaweah Pass;\* but for our party it certainly was an open season, and we never had such fishing before.

The following day we moved down to Junction Meadow. The trail, such as it is, follows down the north side of the stream. It is monumented rather imperfectly, but with care can be followed. In some places there is rough rockwork, in others it is brushy, but altogether is traversable by good animals. About a mile from Junction Meadow we reached some cascades and falls, where the river makes a very precipitous descent. Here the trail is forced away from the river and up a long rocky and steep chimney to the north. This is the Kern-Kaweah Pass. It zigzags back and forth again and again, is steep, but perfectly passable until within fifty feet of the top, where it is blocked by some large boulders. Here we had to unpack and carry our outfit to the top. The animals were gotten up with the assistance of ropes, a very necessary precaution to prevent their turning over backward. Finally, they were all at the top without mishap, but it was very exciting work for a time. By five P.M. we had made camp in Junction Meadow (elevation, 8100 feet), eleven miles by our trail from our Upper Cloudy Camp.

I will not dwell upon the details of our trip down the Kern to Funston Camp, to Moraine Lake, and finally to Buena Loma Camp on the Chagoopa Plateau at the base of the Gray Kaweah. This region has been ably described† and is well known to most Sierra Club members. From here the party went by trail to the extreme northwestern end of the Big Arroyo, to camp as near as possible to the Black Kaweah. I wanted to get an intimate and close-up view of the Kaweah Range, and so Mr. Torrey and I skirted around the base of the peaks on the Chagoopa Plateau, following here and there an indistinct and poorly monumented cattle-trail until it ended in a rocky talus-slope in the third recess from the east, about opposite the middle Kaweah. From here we still went westward, keeping on a level, the going pretty rough and absolutely impossible for animals, until we reached the cirque which heads at the southern base of the Black Kaweah. The country here became more open, with small scattering meadows, and we soon saw signs where cattle had been brought up directly from the Big Arroyo. The descent from this point into the Big Arroyo was long and tedious. By two o'clock

\* See *SIERRA CLUB BULLETIN*, vol. II, No. 3, p. 188.

† See *SIERRA CLUB BULLETIN*, vol. VII, No. 1, p. 23.

we had joined the others at the extreme head of the Big Arroyo, about a mile below the Nine Lakes Basin and not more than half a mile south of where the head of Deer Creek breaks through the very low notch in the Great Western Divide to which I have referred. Here we had an alpine camp, in a delightful little grove of trees (elevation 10,300 feet), at a point very near the Black Kaweah.

The sight of the Black Kaweah had thrilled us again and again as we had circled the peak, and McDuffie, Brown, and I wanted to climb it.

Mr. Farquhar had viewed the peak from various sides and told us he thought the most feasible line of attack would be by the buttress and knife-edge running out from the summit toward the west. I had carefully examined this knife-edge with the glasses from the north, at Miner's Pass and Triple Divide Peak, and also, the day before, from the south, when Torrey and I were skirting the southern base. It looked pretty fair, but I must confess there were some deep, ugly gashes in it, which did not appeal to me greatly. From our camp we could see that the top of the western buttress could be reached by some stiff climbing up one of several smooth avalanche-polished grooves. Upon reaching this top we would then have a fairly near view of the summit of the mountain and could decide on our future course.

The following morning McDuffie, Brown, and I were off at 5:40, carrying with us for emergency fifty feet of rope. In two hours we were at the top of the buttress. The view of the peak from this point was absolutely appalling—the knife-edge running up to the peak, and the peak itself seamed, cracked, scarred, and broken by weathering as on no other mountain we had ever climbed; the whole ridge appeared to be disintegrating rapidly. McDuffie jestingly said we had better hurry over before it should fall to pieces.

From our viewpoint, the best possible route appeared to be along the knife-edge; but again we saw the ugly clefts in several places. One in particular appeared on our side to be most uninviting, but the thought that possibly the north side at that place might be sufficiently broken to get a foothold led us on. We went up and down, around, across, over, and under boulders and broken slabs of granite, always on the alert to prevent slipping and overbalancing, every muscle tense and ready to respond. Our footsteps followed a most uncertain zigzag course, and had they been plotted would have indi-

cated anything but a temperance movement. The way those ragged rocks were broken, splintered, massed, and piled together, helter-skelter, would have rejoiced the heart of a cubist artist. Again and again I was reminded of the cubist painting in Mr. Torrey's home—"The Nude Descending the Stairs."

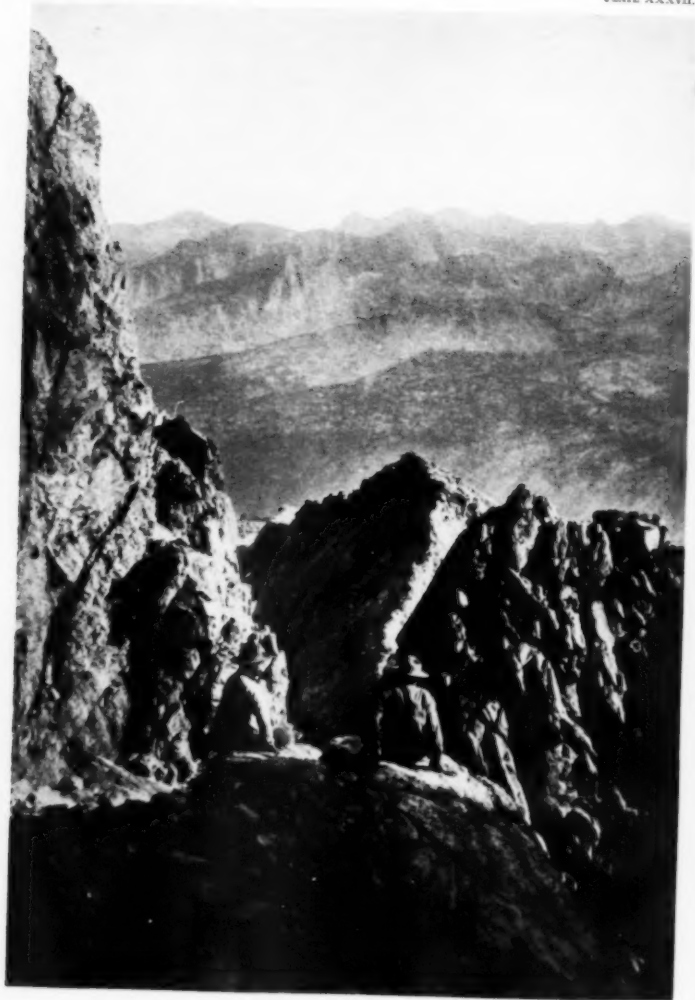
Slowly, very slowly, we progressed along the knife-edge, up and down, around clefts and breaks, always in doubt as to what was fifty feet ahead of us. Finally, at a point perhaps a quarter of a mile from the summit and six hundred feet below it, we came upon the deepest notch of all, the one which had been visible from both north and south. It was not more than fifty feet deep, but its sides were almost vertical and perfectly smooth. For a long time we worked at it, carefully going down each side of the mountain until at the bottom of the notch, but with no way to get onto the knife-edge again beyond the cleft. The whole situation looked hopeless and desperate. From our position here we could get a long, sweeping view of the whole north face of the mountain. It was practically vertical for a thousand feet down onto an extensive snow-field, and we turned away for all time from any hopes on that side.

We then surveyed the southern side of the knife-edge. It was steep enough, but nothing compared to the northern side. The only ray of hope lay in the possibility that if we could get down on the southern slope for several hundred feet, we could then work around toward the east, get more nearly under the main peak, and then by chance find a favorable chimney running up toward the summit. In an hour we had descended far down on this southern side. Here the slope was somewhat more gentle and we were able to work around on various shelves, finally coming to the largest of several chimneys running up in the general direction of the summit. This chimney was pretty well broken up, so that one could get finger and toe holds, but in many places it was worn smooth by the avalanches of rock, snow, and ice which for ages had shot through it. It lay at an angle of sixty degrees, but fortunately kept leading in the desired direction. The greatest care had to be exercised each instant to prevent the starting of rock-avalanches. Brown was a hundred feet ahead. I heard a warning shout, "Look out!" and knew something was coming. I ducked my head behind a boulder just in time to prevent its being hit by a rock the size of a football, which came tearing down. The rock struck my knapsack a glancing blow and bounded off.



PLATE XXXVI.

KAWEAH PEAKS FROM NEAR BLACK ROCK PASS  
The "wish-bone" of snow is at the left of the Black Kaweah  
Photo by Charles A. Noble, Jr.



CLIMBING THE BLACK KAWEAH

At the top of the chimney

Photo by J. S. Hutchinson

After two hours' climbing we again reached the knife-edge and looked over into the deep abyss on the north side. Right above us, two hundred feet to the east, towered the summit. Our chimney now swung directly around to the southeast and narrowed up considerably. Soon we were in a tiny notch on a small buttress running out southwest from the main peak and not more than twenty-five feet from the summit. Here, unintentionally, we started a small avalanche. It shot down in a northwesterly direction, increasing in momentum and volume as it progressed, and in a few moments we heard it thundering down the chimney south and back of us—the chimney by which we had ascended—making a complete turn.

After eight hours of continuous climbing, at 1:45 we were at the summit (13,752 ft.), and spontaneously set up a mighty shout of joy. The peak stands in the midst of a tremendous amphitheater formed by the multitudinous peaks of the Great Western Divide and the peaks of the main crest. We looked into the whole region traversed by us during the three preceding weeks and saw the route we should follow returning to Giant Forest. Immediately below us to the south and west lay the deep depression of the Big Arroyo; on the northwest lay the Nine Lakes Basin; to the northeast lay the Kern-Kaweah Cañon; and to the east we looked along the ragged, jagged crest of the Kaweahs.

The only sign of life having been there before was an eagle's feather on the extreme summit. This we carried away as a trophy. After lunching and feasting on the superb view, we built a monument three feet high, thus making our mountain one foot higher than the next Kaweah Peak to the east. Then a flag-pole was constructed from the legs of our camera tripod, a white handkerchief was attached, and a flag was left floating from the summit. In the monument we deposited a tobacco-can containing the following memorandum:

*August 11, 1920.—Left camp one mile below Nine Lake Basin at 5:40 a.m. Attempted to climb along N.W. ridge but impassable notches prevented. Then dropped down about 400 feet into the southern cirque and ascended the chimney which reaches the northwest ridge 100 feet N.W. of the summit. Arrived at summit at 1:45 p.m.*

*Duncan McDuffie, Berkeley, Calif.*

*Onis Imus Brown, Lemon Cove, Cal.*

*J. S. Hutchinson, Berkeley, Calif.*



At three o'clock we started down, following the same chimney by which we had ascended. This work was most trying and tiresome, requiring greater care than the ascent. When we reached the point where we had first entered the chimney, the question arose should we again climb five or six hundred feet over the buttress to the west and descend to camp by our morning's route, or should we continue down into the cirque immediately below and south of us, past a snowbound lake, around the southern end of the buttress, and down into the Big Arroyo. We were tired of climbing, and so chose the latter course. Then came some rockwork as dangerous as any we had thus far encountered. Our chimney ended in high and abrupt benches and shelves, together making a drop of two or three hundred feet. It took us many long, anxious moments to work our way down to the cirque. At one place near the bottom the rope was used, but I am not at all certain it was essential; possibly there was a way around. The cirque was reached at the top of a snow-field lying there in the form of a huge wish-bone, pointing directly up toward our chimney. I mention this wish-bone, as it may in the future identify our line of ascent. Of course, a snow-field is apt to be a fleeting landmark. The Lake of the Lone Indian near the divide between Fish and Mono creeks was so named because of a perfect Indian head silhouette of snow in the bluffs above the lake; but a few years later, when I was there again, not the slightest trace of the Indian was left. However, with the wish-bone it may be different, for a photograph of the Kaweahs from Sawtooth, taken by Mr. Farquhar in 1912, shows exactly the same wish-bone to which we descended, and we all know that the snow-cross on Mount Tallac persists from year to year.

By the time we reached the cirque the sun had long since left it. It was very cold and the snow was frozen and rough. Then came jagged rocks and talus-slopes about the lake. Continuing in a southerly course, we finally struck some meadow-land and a fine grove of trees on the edge of the Big Arroyo. Here would be a good place to camp as a starting-point for the mountain, provided one could get up the steep benches and shelves above the wish-bone. In some places we had slid down where one could not possibly ascend, but probably these places could be avoided. From the grove of trees referred to we turned directly west around the end of the buttress, and after a long, tiresome descent, part of the way over sharp rocks, we reached camp just at dark, having been out fourteen hours.



Between our camp and Giant Forest lay three days of travel through as fine, beautiful, interesting, and exciting country as can be found in the Sierra, but I must hurry through. One day took us to a group of little lakes below Black Rock Pass. From here, with our glasses looking far across the Big Arroyo, we could see the white flag fluttering in the sunlight on the summit of our mountain. The next day took us across Black Rock Pass (elevation, 11,500 ft.). This is a strange and unusual pass, and should always be ascended from the east, for by so doing you will save one thousand feet in elevation. If you doubt this, look at the contour map. From this pass we went down, down, down Cliff Creek, more than six thousand feet in eight miles, through Redwood Meadow to the Kaweah River for the night, and then, the next day, across the deep gorge of Buck Cañon and up and up an old, unused, overgrown trail to Alta Meadow, where, at sunset, from that wondrously beautiful meadow, we gazed long and intently at the Black Kaweah towering six thousand feet apparently out of the deep abyss of Buck Cañon at our very feet. A few hours the next morning brought us to Giant Forest and the end of the trail.

And now five months have passed, and we still lift our eyes unto the mountains from whence cometh our help, and what do we see?—the wondrous afterglow lighting the high points of the trip—Silliman, Brewer, Triple Divide; the inspiring camps of Roaring River, Kern-Kaweah, and Big Arroyo; the unmapped lake; Colby Pass; and last, but not least, the once defiant Black Kaweah floating the white flag.

## THE 1920 OUTING

### HEADWATERS OF THE SAN JOAQUIN AND THE KINGS

BY MARION RANDALL PARSONS

IT was like old times in the Sierra Club—new trails to travel, new peaks to climb, camp-sites of unknown possibilities, daily mileage estimated on a Colby-plus basis, more than an element of uncertainty about the pack-train. Dear old dunnageless nights even were not unknown. But let us do no injustice to the pack-train. The mules left nothing to be desired. A little high-spirited and lively-heeled at packing-time, they were none the less well-intentioned, ambitious, hard-working mules. Render unto Cæsar those kicks, etc., as the Colonel would say.

The Colonel himself was not of those old times. Successor to Toy Gong and Charley Tuck, he marked a new era in our culinary history. The crowd appreciated his dinners, but at first did not quite understand the Colonel. We have the Colonel's word for it that the crowd "sure perplexed" him. It was too helpful, for one thing. He wasn't used to having people really mean it when they offered help, and it perplexed him, and perhaps he got irritable, so he said. We do seem to remember a wordy barrage or two, even a barbed-wire entanglement of cinch-ropes, from behind which the Colonel, defended from encroaching, helpful womankind, dispensed his wares of hot cakes and trout. But all such feelings passed, and in the end the Colonel left us our friend as we were his.

Huntington Lake, our first camp, was destined to become more familiar than we had anticipated. For the first time in outing history we were on the ground ahead of the pack-train. The barges that ferried us across the lake from the Lodge to our camp were upholstered with bales of hay, in hopeful token that mulish co-operation was at least expected; but the pack-train itself was somewhere along the trail between Dinkey and Shaver, five days behind its schedule. Several thousand pounds of provisions which should have been cached ahead of us in Evolution Basin were deposited in the snows of Granite Pass, quite outside the range of our itinerary, while the lesser amount destined for Mono Crossing was still at Huntington



VIEW FROM PERFECTION (JACKASS) MEADOW  
South Fork of the San Joaquin River  
Photo by C. S. Tappaan



THE EVOLUTION PEAKS FROM McCLURE MEADOW  
1. Mount Wallace      2. Mount Darwin      3. Mount Hermit  
4. Mount Spencer  
Photo by Francis P. Farquhar

Lake. Much recasting of plans this caused the Outing Committee. To its enduring credit be it said that in all the following enforced changes of plan never once did the party miss a meal.

The country about the lake proved charming, wooded with great Jeffrey pines and red firs, and groves of shining aspens. Dainty crimson mimulus spread a rosy carpet under the trees. Fishing was fair, swimming a rare luxury. There was a wonderful abundance of bird-life. Rugged Kaiser Ridge opened up surprisingly wide views of the Sierra from Mount Conness down to the Kings-Kern Divide. Nevertheless, we were happy to break camp the third morning and start on the trail across Kaiser Pass. That was a day of superb forests, a colorful day, rich in the warm reds of pine and fir boles, in meadow green and yellow mats of flowers. A dozen times distant Banner and Ritter shone in the vistas between the trees, rising above the blue cañon of the San Joaquin, or, on the nearer horizon, Red-and-White Peak, crowning Vermilion Valley.

The Hot Springs camp, where we were again delayed for two days, was the least attractive of the trip. Hot baths were too recent a memory to rouse much enthusiasm; so, to pass the time away, knapsacking began—up Bear Creek, or even as far as Seven Gables. At Jackass Meadow, however, the third camp, the charm of the High Country really began.

Our camp there was in the upper meadow at the head of the cascade. Hauntingly suggestive of the Tuolumne were the broad lupine-painted meadows, the glimpses of white peaks, the soda spring, the glaciated pavements. The low dome across the river offered beautiful sunset views of the green lower meadows long-shadowed with spiry pines, of sweeps of sunlit river, and of the burnished sides of Bear Dome and Jackass Dyke. Above camp the San Joaquin River ran slow and deep, its swirling eddies giving little hint of the strong, treacherous current that so nearly darkened our trip with tragedy. No account of the outing would be complete without tribute to the girl who unhesitatingly risked her own life in that river to save another's, or praise of the group of level-headed women who rescued them both in the end.

After two days of fishing in the river and swimming in Lake Florence we moved on again. So far we had not touched the route of the John Muir Trail, but at Blaney Meadow, where the trail comes down from Seldon Pass, we struck into this wonderful "highway"

of the Sierra and followed it all the way to Simpson Meadow. Up to the junction of Piute Creek with the San Joaquin the river valley is broad, splendidly wooded, and in spite of its rugged walls at times almost pastoral in aspect. But at Piute Creek grim cliffs press down to the river's edge and the trail rounds picturesque rocky points almost bare of vegetation. Farther up the San Joaquin Cañon, near its junction with Evolution Creek, groves and meadows again appear, the latter now fringed with the pitiful remnant of flowers that has survived the sheep-grazing of recent summers.

Above 9000 feet the real High Sierra begins. The climb into Evolution Basin next morning took us into this magic country. The main cañon of the San Joaquin, bounded on the west by the beautifully colored peaks of the Le Conte Divide, now opened out at our feet. Evolution Creek, shattered into a white storm of cascades, tumbled down beside us. The upper meadows had the indescribable springlike freshness of High Sierra mornings—the sun striking fire from every dewy blade of grass and glinting gold on every ripple in the river. Forging Evolution Creek, either knee-deep in its icy cold or riding double on the woodcutter's horse, was the comedy event of that morning.

The basin of Evolution Creek is headed by the giants of the Evolution Group—Wallace, Darwin, Haeckel, Spencer, and Huxley. Close under these superb mountains, beside the gray Hermit,\* we made camp for three nights. Had time permitted we would gladly have spent a week there in Colby Meadow, exploring the McGee Lake Basin and climbing in the Evolution Group. As it was, the only successful climbs from this base were made by the two parties who on the same day conquered Mount Haeckel; to Mr. Walter L. Huber belongs the honor of leading the first ascent. Darwin, attempted the same day by three different parties, while adding nothing to summit records, proved appropriately rich in incidents relative to the descent of man.

Twenty of us deserted Colby Meadow the first night for a knapsackers' camp at Evolution Lake. The climb up from the meadows through the golden sunset; the mysterious entrance into the obscurity of the lake basin at dusk; the firelight illumination of twisted albi-

\* The Hermit was the name originally applied to the peak of 12,352-foot altitude that rose just across the creek from our camp. The map is in error here, and subsequent editions should have this corrected, as the name is far more appropriate to the peak first designated.

caulis pines and a rocky shore; the blackness of encompassing mountains, shutting out the stars; then the revelation of our new surroundings by the dawn—ours was a wonderful introduction to a region that, under some conditions, is almost forbidding in its grim austerity. The strong gale of that first night there persisted all next day, adding much to the difficulties of the various climbs. The second morning we were aroused by a patter of hail. Glorious clouds masked the mountains, or, breaking, colored the lake with flame. From the outlet the long cañon vista below was hidden in shifting veils of fog. Climbing was out of the question, so we returned to Colby Meadow, finding the pack-train ready to start across Muir Pass to cache provisions on the Kings River side of the divide.

With a storm in progress, the result of this attempt to cross a little-known pass of 12,059 feet, said to be still deep in snow, was anxiously awaited by us all. Nor was apprehension entirely allayed by the successful return of the train that evening, for the uncertain weather still persisted. Daybreak brought a sharp rain that might mean a blizzard on the pass. But we could not delay the start. Our commissary was as bare as Mother Hubbard's, and, once breakfast was finished, the lunches in our bandanas were the only provisions left on our side of the pass.

So, from the friendly meadow with its golden stream and sheltering groves of tamarack pines we journeyed up into the austere grandeur about Evolution Lake; past Sapphire Lake and the stately pyramid of Spencer; across the rock-strewn, snowy river valley at the base of Mount Huxley, where Hop-o'-my-Thumb willows, barely an inch high, were the sturdiest growing things; past Wanda Lake, half-filled with ice, lying close under the black Goddard Divide, and up the last barren rise to the pass. Clouds filled the sky but did not obscure the mountains. On the contrary, under their luminous glory the peaks loomed darker, higher, more majestic than when seen in sunshine. The usual vivid color of High Sierra altitudes was replaced by almost startling effects of black and white.

Lowering as the weather had looked at dawn, the day proved to be ideal for our crossing. A five-minute flurry of snow and hail on the pass was all the storm quota of the day. The snow was hard, giving excellent footing, and where a small pack-train a few days before had wallowed helplessly up to the saddle-girths our animals passed safely with scarcely a flounder. We felt that we made history

that day when 260 human beings, 100 animals, and 18,000 pounds of supplies crossed Muir Pass without one mishap.

The deepest snow lay on the Kings River side, and the whole party waited to see the first string of mules safely across the pass. From the summit down for more than a mile below Lake Helen the trail was for the most part hidden. The approach on this side was steeper, more abrupt; the mountains pressed more closely and grimly about the cañon's head. But once below the first struggling outposts of albicaulis pines conditions more favorable to plant and animal life quickly reappeared. The dark Palisades on the horizon line, the looming cliffs of Mount Goode and the Black Divide, were softened by the flowers and meadows and beautifully colored tarns of the cañon bottom. In spite of its ruggedness there was a warmth, a brightness about this cañon in striking contrast to the desolate grandeur of Evolution Lake. Still farther down, looking past the sheer white cliff of Mount Langille and the broad swale of Little Pete Meadow, the long cañon vista, ending in a line of shining peaks, brought to mind the Sierra paintings of William Keith.

Among all the days that we have experienced in our Sierra summers none is more wonderful than this one, when we crossed Muir Pass. The region is the climax of Sierra grandeur—a region of cañons rich in vegetation and in wonderfully sculptured walls, of peaks more ruggedly and superbly fashioned even than their gigantic neighbors of the Kern.

The Sierra Club day that is richest in beauty sometimes proves rich in humor too. Camp in Little Pete Meadow that night is indelibly engraved upon some two hundred and sixty memories by the drolleries of its epoch-making feast. Dunnage arrived promptly, but dinner, had it not been for the thousand pounds of provisions and the large dishpans carried down by hand from the cache, might have been both scant and late. But soup, hot corn, and cold corned beef were tonight supplemented by plum pudding, served hot in the can. Serving that pudding indeed, without knives, large spoons, forks, or plates, might have proved a problem had not the fertile brain that guides commissary destinies devised the scheme of counting out the line into groups of ten, giving the head man the can and the rear guard the key and letting them solve the problem for themselves. In spite of the darkness there was no difficulty about keeping these groups of ten together. They hummed away toward the firelight like





PLATE XL

THE HERMIT FROM SIERRA CLUB CAMP AT COLBY MEADOWS

Evolution Creek, 1920  
Photo by Walter L. Huber



SIERRA CLUB PACK-TRAIN ON MUIR PASS, JULY, 1930

Photo by Rodney L. Gilsan

swarms of bees after their queens. Just prior to the announcement of this plan the dunnage-bag-packers, suddenly realizing that all the necessary implements were still out on the trail, became aroused to a really frenzied sense of social responsibility that loudly denounced the tardy commissary-packers.

The rugged splendor of the Middle Fork Cañon continues down to Grouse Meadow. There the towering walls stand apart and the river winds in slow curves through an enchantingly lovely meadow. Its perfect beauty is slightly marred now by a sandy strip of desolation near the lower end, where an avalanche has plowed across, uprooting the grove of pines where Mr. Le Conte's party camped in 1908 on their memorable exploring trip over the present route of the John Muir Trail.

Just below Grouse Meadow, at the junction of Palisade Creek, we made camp for four days. Again time was all too short. There was Rambaud Creek with its lovely lake basin to explore, or Dusy Creek, leading to Bishop Pass. Palisade Creek one night had so many visitors that the main camp was nearly depopulated. Besides the "democratic knapsack party," with its accompaniment of forty mules, many labor parties, with backs bent under their burdens, started out on adventures of their own. Palisade Basin, overlooked by the North Palisade, attracted some. Cataract Creek, up which lay Observation Peak and colorful Amphitheater Lake, called to others. Still others continued on southward past the Dumbell Lakes to Marion Lake, joining us again at Simpson Meadow. For three nights the knapsackers' fires shone—such happy, secluded, cozy fires! The most intimate charm of the outings, their friendliness, their laughter—remember only the firelight shining on the great trees that stretched sheltering arms above your knapsackers' camp, and how it all comes flashing back again!

During our days of wandering the pack-train had been busy withdrawing the "cache from the snowbank" high up on Granite Pass, for all our provisions had now to be carried with us day by day. Henceforward there could be no loitering if we were to return to the railroad on time. We should not leave this camp without comment on the unprecedented appetites there developed. "I cayn't fill 'em up; I just cayn't fill 'em up!" moaned the Colonel when the annihilation of the thirteen hundredth biscuit and the twenty-five gallon of soup found the line still going strong and unsatisfied.

The Middle Fork Cañon from Palisade Creek down to Cartridge Creek was only five years ago one of the most inaccessible spots in all the Sierra. Barriers of glaciated granite stretching from cliff to river made it not only impassable for animals, but also a test of mountaineering skill for men. In color and sculpture it is a magnificent cañon, suggestive of the Tuolumne, but without its waterfalls. Except for the short distance down this cañon, our trip for the next four days was among scenes made familiar on the 1913 outing of rainy memory—the glorious flower-garden of Simpson Meadows; the pine forest just below; the dome of Tehipite, free this time from obscuring clouds and rising white and incredibly high in the moonlight. Several members of the outing party successfully climbed the dome, the first time outing itineraries and weather have permitted the attempt.

Other pictures of this homeward journey rise to mind—the blazing-star (*Mentzelia laevicaulis*) that bloomed at dusk beside our Tehipite camp-fire; the morning view of the Middle Fork Cañon from the brink of Tehipite Valley; the forest of red fir and the field of flowers at Gnat Meadows, libelously so named. There the vaudeville was staged with its last program from our popular violinists, and, with its fashion show, rivaling in originality even the democratic convention fittingly held in Jackass Meadows.

One more day deserves special mention. There has been no other just like it in our annals—lost sheep day, when from Crown Meadow to North Fork we strayed about seeking trails, finding trails, losing them, blazing them, dispensing with them, scorning them, until dinner-time found us at North Fork a shattered party minus half the dunnage, all the stoves, all the horseback riders, all the cooks, part of the commissary, and forty per cent of the personnel. The undaunted Outing Committee produced dinner promptly on time. Not the most vigilant assistant cook can name all the ingredients of that wonderful soup; but a horrid doubt persists whether the three bottles of Worcestershire sauce were meant to enhance or to conceal the ultimate flavor. There was dinner enough to satisfy those present and a liberal reserve in stock for stragglers. And they straggled! A string of mules drifted in; a group of people; another string; a cook; the cavalcade; another cook; still more people. At last, amid cheers, the Colonel rode into the firelight on his white charger. With uplifted arm he delivered himself of an oration in praise of the Judge,

that most democratical man who, like Moses, had led them out of the wilderness when they were lost on the mountain, a ship without a rudder! That speech proclaimed the Colonel a real Sierran.

Near midnight, when the last survivor was counted, there were found still missing seventy-two dunnage-bags, twenty-four mules, five packers, and two members of the party, presumably sharing vigil with the packers. By drafting into active service all extra blankets, tents, and sweaters, the destitute were covered at least, if not conventionally equipped, for the night, and all went to bed in a fair amount of comfort around two great camp-fires.

With only two days left, we were still nearly forty miles from the railroad. There was nothing for it but to push on. No real apprehension for the missing men was felt until the following evening, when, with the arrival of the packers, only one of the men proved to be with them. We were only a short distance from ranger telephones, however. The District Forester, Mr. Paul Redington, and Ranger Price were with our party, and by their kind help within a few hours we were assured that the lost man was safe and on his way to Cascada, where he joined the party again.

And so, in spite of all threatened mishaps, of chicken dinners lost and Fresno feasts deferred, of mislaid cooks and flutes, and tardy dunnage-bags, the trip came to a gloriously successful close. Considered for its scenery alone, this outing of 1920 stands supreme, but in other ways, too, it was a notable one. Never before has so large a party been taken over so difficult a mountain route, and one moreover unfamiliar alike to the Outing Committee and to the packers. Never before, either, has our progress been so dependent on the active co-operation of the crowd itself. To name those to whom the outing is indebted for willing, constant service, would be to name the whole party. But thanks are due particularly to those members without whose help the pack-train, the most important factor in our success, would have utterly failed. While perhaps a melancholy reflection on the times we live in, when men will not, for money received, adequately perform work which they have agreed to do, yet the experience showed a gratifying balance on the other side of the scale—a record of the most generous sacrifice of personal convenience and pleasure for the sake of the common good.

## FIRST ASCENT OF MOUNT HAECKEL

BY WALTER L. HUBER

FOR several years my work has occasioned many visits to Lake Sabrina, a reservoir at the head of the Middle Fork of Bishop Creek. From the first these visits have served to arouse my interest in the wonderful peaks beyond the lake and at the head of this fork of Bishop Creek. From here some of the giants of the Evolution Group—Darwin, Haeckel, and Fiske—present an imposing view. Indeed, their greatest precipices and snow-fields are on this (the Inyo) side. Each visit to Lake Sabrina (named for Mrs. Charles M. Hobbs, wife of the first general manager of The Nevada California Power Company) strengthened my desire to climb Mount Haeckel, which, from this direction, is a very ragged and forbidding pyramid above a rather extensive glacier.

Finally, when plans were completed for the long-delayed outing of the Sierra Club to the South Fork of San Joaquin River, to the Middle Fork of Kings River, and the crossing of Muir Pass, I joined the party with a hope that somewhere on the trip, which would pass close to the western base of the mountain, I would find an opportunity to try to climb this western side, which I had never seen, but which I believed would afford an easier ascent than did the eastern (or Inyo) face. Naturally I viewed the delays due to packing difficulties early in the outing with some impatience, as I appreciated that the time previously allotted to the exploration of Evolution Basin was being thereby reduced. To seek out a feasible route up an unclimbed peak often requires more than one attempt and more than one day's exploration.

The outing party broke camp on the South Fork of the San Joaquin River early on the morning of July 13th and made a short march of a few miles to Colby Meadow on Evolution Creek. Twenty-six of the party did not select camp-sites here, but waited for the arrival of the pack-trains, and during the afternoon carefully weighed out provisions for a knapsack trip which was to take us on ahead of the main party for a couple of days. We were served first at supper, and, after a rather hasty meal, lost no time in shouldering our



EVOLUTION LAKE

1. Mount Black 2. Mount Spencer

Photo by Walter L. Huber





MOUNT HAECKEL (13,422 FEET)

Photo by Frederick H. Morley

packs and starting up the trail to Evolution Lake, where we planned to camp for the night. This first march was to be a short one, only a few miles, but it included a climb from an elevation of about 9900 feet to about 11,000 feet. At this elevation and after a hearty meal a heavy knapsack load is a little burdensome; but there were compensations—none of us will forget the wonderful sunset and the view down the cañon of Evolution Creek, with such an indescribable riot of sunset coloring. Darkness gradually overtook us, but no difficulty was experienced in following the trail. Not so in selecting camp-sites after we arrived at Evolution Lake. This lake, as we discovered next morning, is so high that its shores are without timber other than a few scattering clumps of *Pinus albicaulis*, which afforded scant shelter against the winds which we experienced. After much searching with flashes, everyone was finally located—whether comfortably was a subject of later discussion.

Next morning camp was astir early, and the nine of us who were to try the climb of Mount Haeckel, with loyal and generous help from others of the party, were able to start at 6:30. The tramp around the shore of Evolution Lake in the frosty air with frozen grass crunching under every step was invigorating—no member of the party had any tendency to lag. A careful survey from camp with binoculars had convinced us that to attempt to reach Mount Haeckel from the amphitheater north of Mount Spencer would get us into difficulties when we reached the crest of the Sierra just north of our peak. Although we were unable to see into the basin between Mount Spencer and Mount Huxley, the topographic map indicated that this route would probably be preferable. Accordingly, we pushed round the shoulder of Spencer and to the top of a bench of morainal matter at the lower end of the basin between Spencer and Huxley.

At about this point we discovered fresh footprints crossing a snow-field and indicating that another party was ahead of us and that it was probably aiming for the same goal. From this vantage-point we studied possible routes of ascent. To reach the crest of the range directly before us seemed quite easy, but to cross the many sawteeth encountered before reaching the summit would certainly require much slow and tedious climbing. Another possibility was to cross a snow-field to the left and pass through a chimney to the top of a ridge which led up at a steep angle from the west to a junction with the main crest just south of the summit. This last route was se-

lected. Soon the other party was sighted making the ascent by the longer route.

As our route was uncertain, three of us climbed ahead across the snow-field, through the chimney, safely made the climb up its east face, and began the ascent of the steep ridge leading to the crest. In order to be certain that the remainder of the party found the safest way to climb out of the chimney below us, I retraced my steps to its east wall. Before doing so I asked Bowers and Emerson to seek a possible route to the summit and reach it as soon as possible. Finally, when all of the party had safely climbed from the chimney to the rocky ridge, I turned my attention to the summit. A strenuous climb brought me to the junction of the western ridge and the main crest. The summit of the peak is a short distance to the north and somewhat higher. In traversing this stretch one encounters a face, perhaps thirty or forty feet in height, which is vertical, but where good handholds are available. I reached the base of this face very much out of breath, but with the assurance of my two comrades, who had preceded me and who were now smiling down from the top. A few moments later I half-climbed and half-rolled over the top to find both my companions urging me on for the last few feet to the top block of rock, which they had refused to touch before my arrival.

At 10:30 A.M., July 14, 1920, I had the satisfaction of sitting on the topmost block of Mount Haeckel (elevation 13,422 feet) and of looking directly down the Middle Fork of Bishop Creek from its head. It is needless to relate the satisfaction experienced after ten years of desire to accomplish this feat. We found no evidence of any previous ascent of the peak. It is also a pleasure to record that the entire party of nine, consisting of Nathan A. Bowers, G. D. Emerson, Francis P. Farquhar, Rodney L. Glisan, Mrs. Walter L. Huber, Walter B. Marble, Lulie Nettleton, Robert M. Price, and the writer, reached the summit. Three fellow Sierrans, Allen, Crofts, and Haskell, constituting the party which had ascended by the south ridge, arrived at the summit but a few minutes later than the leaders of our party, but under the impression that they were climbing Mount Darwin.

The view from the summit was an interesting one, particularly of the near-by peaks of the Evolution Group and of the Palisade Group. Because of a terrific wind, we tarried to enjoy neither lunch nor view very long, but began the descent.

## FIELD NOTES OF THE 1920 OUTING

ELIZABETH VAN E. FERGUSON

**K**AISER RIDGE, July 6.—Perhaps no plant of our Sierra forests attracts more attention than our brilliant blood-red Snow-Plant (*Sarcodes sanguinea*). It is a very Mephistopheles among plants. Finding it, however, on a warm summer's day miles from any snow, one is inclined to question its popular name. Indeed, it is no more truly a snow-plant than many another Sierra plant. It does not grow nearly so high nor so close to the banks of perpetual snow as do the sky-blue Polemoniums or the Sierra Primroses. It is a plant of middle altitudes, associated in our minds with magnificent red-fir forests. How often have we not come upon a clump of these scarlet miracles lighting up the leafy mold at the roots of some giant fir tree! Perhaps a snowbank may form a background—but it is a fast-melting snowbank, the last remnant of the winter fall. It is doubtful if a Snow-Plant ever pushed its way up through winter snow, although it is possible that a late spring snow might cover the ground with a light mantle after the plants had started. Such a belated snowfall piling about the brilliant red stalks would certainly give the effect of their actually growing and blooming in the snow.

Although called a parasite, the Snow-Plant is not such, as it does not draw its sustenance from the living tissues of another plant. It is a saprophyte—that is, it lives on dead, decaying vegetable matter. Its blood-red stems arise from an underground, very much involved mass of coralline roots which gather up food materials from the leafy mold of the forest floor. Often there are as many as a dozen stalks from a single network of these roots.

*Mono Meadows, July 8.*—One of the rare treats of a trip into the mountains is to come suddenly upon a light-blue patch of the delicate jewel flowers of *Downingia montana*. This is a little member of the Lobelia family which may be found on the margins of vernal pools. As in Mono Meadows, the water often entirely disappears from these pools, leaving in its place a close carpet of these tiny flowers. Although beautiful in mass, the flowers are even more lovely when examined closely. Perched at the top of a long, slender

green ovary and calyx-tube is the dainty little orchid-like flower. The upper lip, very small, is composed of two minute lavender lobes; the lower lip is broad and spreading, white at the throat, with a bright blue border and three rounded spreading lobes.

*Jackass Meadows, July 10.*—Not far from the rushing waters of the South Fork of the San Joaquin we found a beautiful clump of Scarlet Gilia (*Gilia aggregata*). The long scarlet trumpet-shaped flowers are borne on loose panicles, often a foot long, and when occurring in mass are very striking. If anyone watched these plants carefully he must surely have noticed the humming-birds which were constantly darting about and stealing sweets from the brilliant tubes. Such tubular flowers often have small nectar-secreting glands at the base of their tubes which the humming-birds with their long beaks are easily able to reach. Often the humming-birds help pay for their stolen sweets by transferring pollen from one plant to another. Indeed, it might be easily demonstrated that nature had provided for this method of cross-pollination. In these Scarlet Gilias, as in certain Pentstemons, the stamens, with their anther-sacs full of pollen, are just the right length to dust the little frontal feathers of the humming-bird. The bird then flies to another flower and, first hitting the fertile stigma, brushes off some of the pollen upon it. Often the humming-birds become so covered with pollen that they appear to have yellow foreheads. Indeed, in the early days a new species was described as having a yellow patch which distinguished it from our common Anna hummer. Later it was discovered that this yellow would brush off—it was nothing but pollen. That in turn nature has given the humming-birds a strong sense of color is shown by their love for red. A red tomato-can or a red bandana will often cause a hummer to stop in his rapid flight and dart toward the brilliant object. Many people believe that there is a correlation between the presence of humming-birds in this country and our abundance of bright red flowers.

*Evolution Basin, July 14.*—As we approach the higher altitudes the attention centers on those brave plants which occupy the frontiers of the earth's vegetation and typify the Alpine Zone. Due to the high actinic quality of the light, most of these plants possess flowers of intensely pure colors. Indeed, the alpine flowers appear very delicate and are in strange contrast to their rugged and barren surroundings. It will be found, however, on closer examination that



THE BLAZING STAR  
(*Meibomia laevicaulis*)  
Photo by Ynez de Reygadas



SIMPSON MEADOW, MIDDLE FORK OF KINGS RIVER

Note flower-garden in foreground  
Photo by Walter L. Huber



the permanent portion of the plant body is extremely condensed at or below the surface of the ground. The stems branch and rebranch, forming with the leaves a closely interlaced cushion-like vegetative body which rests on the ground or hugs close some rocky crevice. This form of plant body is well fitted for the long winter or for the great variations in temperature from freezing to summer mildness which occur almost daily during July and August in our alpine Sierra Nevada.

The Alpine Eriogonum (*E. incanum*) illustrates this high montane vegetative habit. Its yellowish or reddish flowers arise from a dense mat of gray foliage which flattens out on patches of decomposed granite. The little golden Draba (*D. lemmonii*) is another vivid alpine plant abundant in the Evolution country, its leaves forming close rosettes at the base and its bright yellow flowers with the petals in fours, showing its relationship to other members of the Mustard family. One of the most handsome of these plants is the Alpine Phlox (*P. douglasii*), its cushion covered with dainty white or pinkish flowers. True snow-plants are the little Snow Fairies (*Lewisia pygmaea*, the Bitter-root of the Indians)—tiny plants with white star-flowers, to be found growing in the moist seepage slopes of melting snowbanks.

Another type of alpine plants is frequently much dwarfed, but does not develop laterally into a distinct smooth cushion. One of the finest of these high mountain species is the yellow Columbine (*Aquilegia pubescens*), a dainty graceful plant, in marked contrast to the awful grandeur of its rocky surroundings. The flowers are large and handsome, with very long spurs, resembling the columbines of our gardens. The color may range from cream, pale yellow, or coral to pink or lavender. It is a very aristocrat among columbines, different from the modest red-flowered sort which grows in lower altitudes and is the common columbine of our coast ranges.

Equally beautiful plants of the high rocky ledges are the sky-blue Polemoniums, sometimes called Sky Pilots, their petioles crowded with tiny leaf-segments and the stems ending in dense clusters of lovely blue flowers. One of the most delightful sights imaginable is to find a clump of Sierra Primrose (*Primula suffrutescens*) nestled under the sheltering ledge of a great granite boulder. The shiny toothed leaves from which arise the clusters of small red flowers make this plant particularly attractive.

Long before we reached Muir Pass even these alpine plants had disappeared. Snow, rocks, ice piled one upon the other. Only occasionally the little Arctic Willow (*Salix arctica* var. *petraea*) raised its fuzzy gray catkins above the ground. These miniature trees testify surely to the arctic character of this desolate country. The stems are very short and the slender tortuous branches much depressed, forming a prostrate mass only one to four inches above the frozen ground. Amid the rocks and ice of a mountain-top willow trees an inch high prove conclusively the triumph of life.

*Tehipite Valley, July 24.*—Along the trail down the Middle Fork Cañon we passed a Piñon Pine (*Pinus monophylla*), evidently a stray from the dry eastern slope of the Sierras. Possibly this tree marks an old Indian trade route. The Indians' fondness for piñon-nuts is well known, and it is believed by many that these isolated specimens of Piñon have sprung from nuts left by the Indians in their journeyings.

Our camping-ground lay amidst the boulders of a sandy wash. Here and there a tall Yucca (*Y. mohavensis*) raised its towering stems skyward.

As evening fell we gathered about the camp-fire. How different was this balmy air from that of a few nights before! How different was the vegetation of this warm semiarid valley to that of the wet snow-swamps of higher altitudes! The great Maul Oaks (*Quercus chrysolepis*) spreading their huge branches some fifty feet above us made the memory of the little alpine dwarfs very unreal.

As we sat in the flickering firelight, a slight motion called my attention to a prickly grayish-green plant by my side. It stood about three feet high and the leaves were covered with fine barbed hairs which caused them to stick to anything that touched them. But what made the plant conspicuous were the large yellow buds which crowned the long wandlike stem. These yellow buds seemed alive. First the long golden petals opened slowly, and gradually the mass of golden stamens spread out to form a filmy halo of spun gold. When fully open, the flowers of the Blazing-Star (*Mentzelia laevicaulis*) spread for three or four inches. A magnificent sight they made there in the firelight—another star blooming on earth as a reflection of the stars above.

## THE LONG-LOST CARPENTERIA

BY WILLIS LINN JEPSON

IN the year 1852, John Torrey, professor of botany in Columbia College, published in the *Plantae Fremontianae*\* a new species of shrub from California which he named *Carpenteria californica*, the genus name being in honor of his friend Dr. Carpenter, of Louisiana. This shrub had been collected by Fremont on one of his California expeditions. No definite locality was given for it, except that it came from the "Sierra Nevada of California, probably on the headwaters of the San Joachin."

In that early day the Sierra Nevada was only slightly known, and the indication of Fremont's station for the shrub was regarded at that time as extremely vague, since it may have been taken to mean any part of the vast territory drained by the San Joaquin River. The specimens had been collected in fruiting condition, and it was only from some vestiges of withered flowers that Dr. Torrey was enabled to make out the character of the petals and stamens. He demonstrated that it belonged to the Saxifrage family, the *Philadelphus*, or mock-orange, being one of its relations.

For a long period, indeed nearly thirty years, nothing more was known of this peculiar shrub. In the later seventies, nurserymen at Fresno discovered in the Sierra foothills northeast of Fresno, near the Grapevine Spring, above the toll-house on the road to Pine Ridge, at about 3000 feet, a strange bush which turned out to be *Carpenteria californica*. They collected abundant seed, distributed it widely to horticulturists, and it came into cultivation in various parts of the world.

For a long time a bush has been flowering regularly in its season in the Botanic Garden of the University of California. It has pure white flowers, two to two and one-half inches in diameter, with a large yellow center of golden stamens. The buds of these flowers terminate the branches, and on opening, instead of remaining horizontal, turn to a vertical position and look frankly at you in a most engaging way. The bush when in bloom is a very lovely one for garden

\**Smithsonian Contributions to Knowledge*, vol. vi, art. 1, p. 12, t. 7.

decoration, but it would seem that the flowers are often more beautiful in the native habitat of the species.

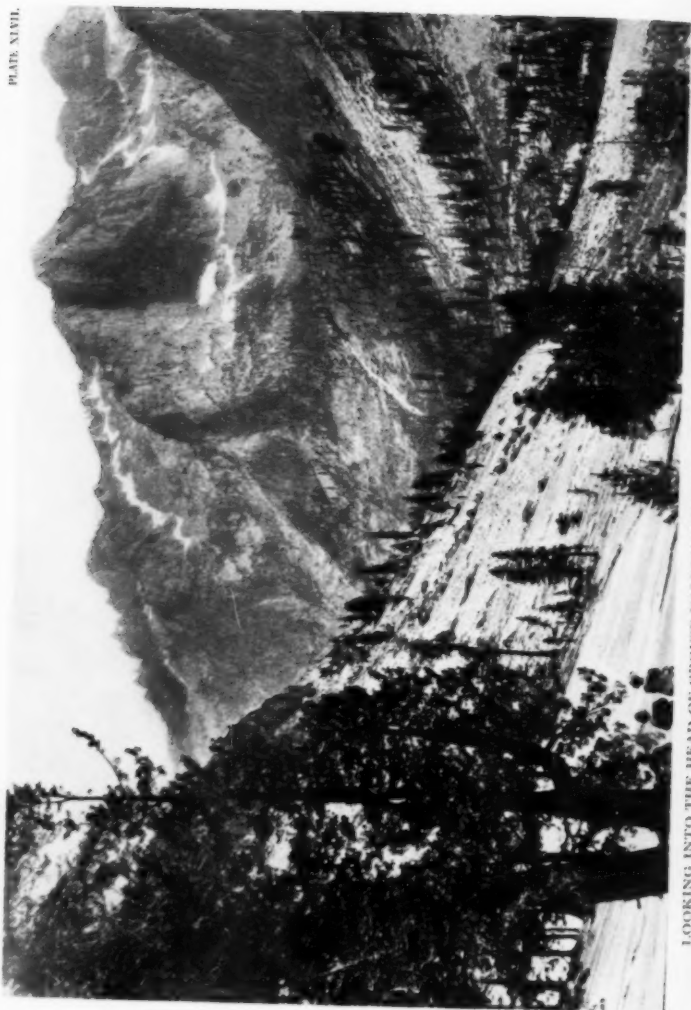
The known distribution covers a very restricted area in the Sierra foothills of Fresno County between the San Joaquin River and Kings River, the range of elevation being from 2000 to 3000 feet. More specifically, it extends from the Grapevine Spring southerly to Backbone Creek between Aubury and Oren and thence to the south side of the San Joaquin River on the Italian Bar Trail. It recurs again on Sycamore Creek, a tributary of the Kings River, which appears to be its most southerly station. Within this very limited area it is abundant in spots, blooms finely in June, and thus locally whitens the slopes on the lower borders of the Yellow Pine belt. Mr. Ralph Hopping has remarked to me that *Carpenteria* bears a superficial resemblance to a clump of California Laurel, and that at a distance one might be pardoned for mistaking it for that species. Growing in so narrow a habitat, it would seem in some danger of extermination, especially with the advent of the white man and his impinging accessories, such as herds and flocks. It may therefore be regarded as fortunate that its foliage is too bitter for sheep and that these animals will not touch it. What is too bitter for sheep is obviously safe from cattle.

But what of the long-lost station where Fremont originally collected this shrub? On his five exploring expeditions he crossed the Sierra Nevada at only five different points: at or near the modern Carson Pass; at Tehachapi; at or near Donner Pass; on the upper Sacramento; and at Walker Pass. Nowhere near any of these passes has *Carpenteria* been discovered, and it is too conspicuous a shrub to be missed in these days of closer botanical surveys. On the second expedition Fremont entered California from the Great Basin over Carson Pass, making a very terrible passage in the midst of winter. He left the Great Valley at the head of the San Joaquin through Tehachapi Pass. The track of the third expedition is, however, for us much more significant. Leaving Bent's Fort on the Arkansas River with his command in August, 1845, he moved in a general westerly direction through the Great Basin until confronted by the great Sierran wall. Here, at Walker's Lake, he found himself short of provisions. It was therefore determined to send the main command under Joe Walker southward with instructions to proceed through Walker Pass to the southern Sierras and winter in the valley

*CARPENTERIA CALIFORNICA*

A flowering branch from the individual grown in the Botanic Garden of the University of California. The inset shows a horizontal cross-section of the ovary, with the peculiar arrangement of the placentae and ovules.

Drawing by Dr. Helen Gilkey



LOOKING INTO THE HEAD OF GROUSE VALLEY, MIDDLE FORK OF KINGS RIVER, FROM DUSY CREEK  
Photo by Walter L. Huber

of the Kern until relieved.\* Fremont himself with a few men crossed the Sierras at or near Donner Pass, obtained a supply of provisions from Captain Sutter at New Helvetia (the later Sacramento), and immediately proceeded southward to join the Walker party. After passing the Auxumnee (Merced) River he entered the Sierra foothills and ascended to perhaps 3000 feet, coming out again upon the San Joaquin plain, which he reached on the seventh of January, 1846. He had been directed by Walker to ascend the Kern River, but after passing the main San Joaquin he encountered the "Lake Fork of the Tulare," which he mistook for the river mentioned by Walker, and which we now call the Kings River. His map accompanying the Geographical Memoir of Upper California† shows that he ascended the Middle Fork of Kings River and described a wide circuit about its headwaters.

This particular map is a famous document. Its title is "Map of Oregon and Upper California from the surveys of John Charles Fremont and other authorities. Drawn by Charles R. Preuss, Washington, 1848."‡ Since the Sierras at that time were all but utterly unknown except for Fremont's expeditions, the number and course of Sierran rivers are indicated with remarkable exactness. The South Fork of the Kings River is well shown, while the North Fork of the San Joaquin is shown to approximate the sources of the Merced. All of which seems to me to indicate that Fremont actually ascended to a certain degree the San Joaquin River and amongst other things collected, in January, 1846, on that river, the remarkable shrub *Carpenteria*, and that this station we know today is really the long-lost station for *Carpenteria*, than which no other shrub in the world perhaps is more localized.

\* Cf. Williamson, *Pacific Railroad Report*, vol. v, p. 17.

† Senate Document (30th Congress), Miscellaneous, No. 148.

‡ This is the map which first bears the legend "*Chrysopylea* or Golden Gate," at the entrance to San Francisco Bay. Preuss, the draughtsman, accompanied the expedition, as did also Kern, the topographer, who wintered with Walker on the upper Kern, and for whom Kern River was named.



## GLENORA MOUNTAIN: A REPETITION OF MUIR'S CLIMB OF 1879

By E. MALLINCKRODT, JR.

LOVERS of Alaskan lore are familiar with John Muir's story of his climbs on Glenora Mountain, told in his own incomparable way in the volume entitled "*Travels in Alaska*."\* The thrilling rescue of his injured companion is passed over so modestly, however, that one must read Mr. Young's own story† to gain a true picture of Mr. Muir's prowess on this occasion and of his devotion to his friend. But, best of all, he who would learn what resolute men do on mountains should essay to traverse their routes.

The return of our hunting party to Telegraph Creek, some days before the departure of the boat down the Stikine River, offered the alluring possibility of seeing the view which Muir described as "one of the greatest and most impressively sublime of all the mountain views I have ever enjoyed." Incidentally, I should be able to check the height of the mountain by my own accurate aneroid. The imagined difficulty of finding a guide who knew the route up Glenora Mountain was dispelled by my outfitter at once. However, if any white man had climbed it in recent years he could not recall the incident. It may be remarked that the innocent traveler in that country will have no difficulty at all in securing the services of an Indian who knows the trail to any desired spot. I have suspected, from more than one disillusionment, that there is no distinction in the Tahltan mind between the objective existence of a trail and the subjective consciousness of being able to get there, trail or no trail. Such a distinction would be useless in a country where there are no trails anyway, and argues the weakness of the whites—so reasons the native, in all probability.

Assured by our well-wishers that we would be back by nightfall, and with lunch in our pockets, Bob, a Tahltan Indian guide, and I started off on horseback toward Glenora on the first of October. Over that old road, now much overgrown, many of the Klondike

\* *Travels in Alaska*. By JOHN MUIR. Houghton Mifflin Company.

† *Alaska Days with John Muir*. By S. HALL YOUNG. Fleming H. Revell Company.

gold-seekers in 1898 had passed night and day in feverish haste. They journeyed up the Stikine River—generally after it had frozen—to Glenora, then a flourishing town, and down the Teslin, Hootalinqua, and Lewes rivers into the Yukon. A pitifully equipped lot they must have been for the work in hand. Bob recalled that among them there were Chinamen carrying their polished brass rice-bowls into the wilderness and men driving ox-carts, although beyond Telegraph Creek the road became a trail narrow even for the pack-train.

We had, for some miles as we rode, good views of the ample green slopes that lead up to the summit of Glenora Mountain. The summit itself, of grayish-looking rock, much foreshortened from our viewpoint, appeared above a small snow-field.

As Muir pointed out, the summit is not an isolated peak, but rather more in the nature of a jagged ridge broken by cliffs and gullies into separate pinnacles. Viewed later from the river steamer at various distances, the summit ridge appeared not to have any one pinnacle especially preponderating in altitude over the others.

It soon became evident that Bob's Indian trail did not lead up the main mountain at all; so we continued to the base of a ridge, still about two miles distant from Glenora, which appeared to offer the most direct route through the timber and toward the summit. After lunch we began the climb up a gently rising timbered flat. Inwardly rejoicing that we had escaped the Scylla of real alpine difficulties, we were soon to be swallowed up by a vegetable Charybdis which, disguised by distance as a grassy slope, invites the innocent to destruction—at least to the destruction of his outer garments and his peace of mind. Thick growths of small trees, various sorts of willows, all but impenetrable horizontal alder thickets, some of the limbs of which were three inches thick, defended the lower ramparts of the mountain. The art of traveling through such obstacles is known to the native Indian, and my admiration for Bob grew as I found him keeping true to our general direction in spite of many windings. But our hard labors for an hour and a half only netted us a rise of about 1500 feet, or less than 1000 feet an hour. Another hour and a half brought us well above the timber to steep green slopes mostly covered with a luxurious growth—one might better say a thatch—of stunted evergreens and flat-spreading junipers difficult to pass in ascent and slippery in descent.

Working off to the right around several rock buttresses, which at first we took to be the main peak, we came in sight of the final rock-wall. It was then half-past six, and the aneroid indicated that we had ascended 4400 feet. We sat down on the grassy meadow for a moment's rest, as the work had been hard. I was reflecting that there was not much daylight left for climbing the thousand feet of rock-wall, which had not proved easy going even for Muir, when suddenly Bob became electrified and uttered the magic word "Bear!" "We go after him—what you say?" Unwilling to turn back, but knowing the force of the hunting instinct, and believing that we might make another ascent in the morning, I yielded. The bear was below us in the dwarf evergreens on a steep slope and had not seen us. As our only weapon was an army automatic pistol, I noted with some satisfaction that his color was black, indicating that he was not a grizzly. The Indians say that the winds travel up the slopes in the day and down at night, but the air was so nearly still that we could not be certain in which direction our scent was traveling. I knew Bob to be a good hunter, and we made a detour downward rapidly and nearly noiselessly. Our only chance was to try for a close shot. We came over a little wooded crest, and there, across a small ravine, was the bear, one hundred yards distant, already on the run. My firing had no more serious effect than to accelerate his speed, and he bounced out of sight down the slippery carpet of evergreens like a big rubber ball. Bob's stalk had been letter-perfect for a grizzly, but his smaller black cousin keeps moving and thus renders stalking more or less a matter of chance.

I was soon to learn something of what Muir and his injured companion went through in their descent by night, as the light was fading fast. When we reached the thick brush I was divided between the fear of getting branches in my eyes and, in my frequent slips, of falling on the point of my ice-axe, a useless encumbrance on such a mountain. In the alder thickets I was reduced to crawling through such holes as already existed, as my weight, unlike the massive Bob, was insufficient to part the branches. Frequently we lost each other in the darkness. The hope of a warm supper at the cabin of the river-boat's pilot decided us to go on to Glenora, although it was then nine o'clock. As we rode down what had been the main street in the once busy town, not a sound reached our ears and not a ray of light greeted the eye from the dimly discerned rows of cabins on



PLATE XVIII.

VIEW OF THE ALASKAN MOUNTAIN CHAIN

As seen from a summit near Mount Elmer  
Photo by E. M. Mather, Jr.



Reproduction of an original drawing by John Muir, found among his papers, and bearing the following legend: "View of a section of the main chain of the Alaskan mountains, 10,000 to 18,000 ft. high, from the summit of Mt. Glenora, 7200 ft. high, on the divide between the basins of the Yukon and Mackenzie."

each side of us. The loneliness of the forest is pleasant compared with the gloom of deserted human habitations. Rather than risk the exposure of a night in the open without blankets and food, we forced a window and entered a cabin belonging to an acquaintance of Bob's.

Next morning we retraced our steps, literally in many places, Bob showing me with evident satisfaction where we had broken twigs on the preceding day. Four hours' hard work put us at the point at which we turned back the evening before. We sat down beside an icy brook and ate the small remnant of our food. It was cold and there was a high wind. Swirling mist clouds hid the valley and the sun, although occasionally we could discern its disk through them. Advancing rapidly to the head of the grassy meadow, we climbed up what appeared to be an old terminal moraine overgrown with green, then over a long rock-slide, and arrived at a small snow-field which led directly to the steep rock and scree slopes of the final rock-wall. This we reached at a notch, or saddle, between steep pinnacles of disintegrating rock which at first sight appeared unscalable and dropped off sheer on the side opposite. The direction of the ridge seemed to be at right angles to the line of our ascent, so we turned to the left and climbed the first pinnacle. Seeing it was not the highest, we continued along the very broken and sharp crest of the ridge. My guide had now recovered from his feeling that such rocks were impossible, and, although his shoes had no edge-nails, he followed with great determination and natural skill. The rockwork would probably not compare in difficulty with that of a mountain like the Mitre at Lake Louise, but the quantities of loose rock everywhere rendered handholds and footsteps very insecure. From the top of a second rock-spire we saw, across another small pass, a much larger and higher rock-mass. This required careful work, as we had to find our route, but we surmounted it without any great difficulty. It was now nearly half-past three. Continuing forward across the small rocky summit, we saw through the mist squalls another mountain mass of apparently the same height, but separated by a pass of considerable width, at the bottom of which lay a glacier—evidently the "small residual glacier" noted by Muir.\* Seeing that we were on the highest point of the ridge, we built the marker and put our names and the barometer readings in a tin can under the stones, a formality

\* *Loc. cit.*, p. 52.

that caused Bob to remark, "Hope white man find my record some day." We reached Telegraph Creek at midnight, much to the relief of our friends, who intended to start a searching party the next day.

The green ridge that we had ascended is bounded by two streams which, while spreading far enough apart, perhaps four miles, at their junction with the Stikine to form the flat on which the old town stood, form converging ravines toward the top. From the upper slopes of the ridge, the town lay perhaps halfway between south and southwest. This agrees with Muir's statement that the mountain lies northeast of the town.

It is open to question whether our route was throughout identical with Mr. Muir's. Mr. Young\* mentions "a small glacier on our right" that "had to be crossed." We, on the contrary, did not have to cross this glacier, and it appeared on the left-hand, and far below us only as we neared the end of our rather long traverse across the ridge crest. Our general direction up the grassy slopes was northerly, and to gain the meadow where we lunched we made a considerable detour to the right, having elected to work around the rock-shoulders occurring at an elevation of 3700 feet in this manner. If Muir turned to the left at this point, it would in all probability account for Mr. Young's observations. In fact, in descending, we noted that the most direct route was across a portion of the glacier, but the descent from the rocks to the ice appeared so precipitous that we dared not try it. Muir doubtless found some safer route; but the feat he performed in getting the injured man down was remarkable in the extreme and cannot but heighten our admiration for the great mountaineer.

I am reliably informed that Mr. Muir carried a valuable aneroid on his mountaineering trips, and Mr. Young† states that the instrument showed "a height of about seven thousand feet at the base of the great cliff that crowned the summit." Muir‡ says: "The peak on which these observations were made is somewhere about seven thousand feet high," but he believed the town of Glenora to have an elevation of one thousand feet, whereas its true altitude is about 450 to 500 feet.§ The instrument I carried was a Goulier aneroid having a dial about one and three-quarter inches in diameter. It

\* *Loc. cit.*, p. 25. I can see no resemblance between Glenora Mountain and the illustration in this book.

† *Loc. cit.*, p. 26.

‡ *Loc. cit.*, p. 95.

§ Private communications from Department of Mines, Province of British Columbia.



had been under test at the Bureau of Standards and was presumably in good order. Upon my return they very kindly tested it again and found it to be in excellent working order. The indicated altitude\* was 6144 feet above Glenora, or approximately 6600 feet above sea-level. Six months later the same instrument, carried on foot to the top of Mount Wilson (Pasadena), indicated about one hundred feet higher than the true height of 5704 feet. Until better data are obtained, Muir's estimate must be reduced 500 feet and the height of the mountain, in round numbers, placed at 6500 feet above sea-level.

One fortunate circumstance compensated, partially at least, for the loss of the view at the summit. During both climbs the weather had been clear on the lower slopes and I was easily able to locate the mountains, one of which I had climbed, surrounding a lake called "Glacier Lake," where we camped for a week. From a point halfway up Glenora Mountain, this mountain, which is twenty or twenty-five miles distant, bears about thirteen degrees east of true (geographic) south. We called it "Almira Mountain," and from its summit, 7700 feet above sea-level, or about 4700 feet above the lake, (the day being exceptionally clear), the view was one of awe-inspiring beauty. The immense snow-fields were more billowy and a purer white than I had ever seen in Switzerland. Perhaps it was the effect of contrast, as the exposed rock appeared black where the snow had slipped away in fanlike slides. The same difference in the quantity of snow was to be here observed as exists between the mountains about Lake Louise and those of the Selkirks at Glacier, only to a greater degree. In fact, so great was the profusion of snow and ice, even on the lower mountains, on one of which I stood, that all had the appearance of peaks of great altitude. To the west and northwest, as Muir said,† "More than three hundred miles of closely packed peaks of the great Coast Range, sculptured in the boldest manner imaginable, their naked tops and dividing ridges dark in color, their sides and cañons, gorges, and valleys between them loaded with glaciers and snow. From this standpoint I counted upwards of two hundred glaciers, while dark-centered luminous clouds with fringed edges hovered and crawled over them, now slowly de-

\* The actual readings were: 9 A.M. at Glenora, 745 mm.; 1:30 P.M., 630 mm.; Summit about 3:15 P.M., 596 mm. 6 P.M. (return to Glenora), 744 mm. The altitude scale on this instrument, according to the Bureau, is correct for a temperature gradient which may be considered a good yearly average value for the United States.

† *Loc. cit.*, p. 93.

scending, casting transparent shadows on the ice and snow, now rising high above them, lingering like loving angels guarding the crystal gifts they had bestowed."

The photographs, while not doing full justice to the great horizon of peaks by any means, are presented because they represent a considerable arc of what he thus described. These rocky giants of the New World, wrapped in eternal snow and ice, send out their challenge to adventurous mountaineers and await an answer.

*Life consists with wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him. One who pressed forward incessantly and never rested from his labors, who grew fast and made infinite demands on life, would always find himself in a new country or wilderness, and surrounded by the raw material of life. He would be climbing over the prostrate stems of primitive forest trees.*

HENRY D. THOREAU

## ASCENT OF MOUNT MORAN, GIANT OF THE TETONS

By LeROY JEFFERS, A.C., F.R.G.S.

OUR mountaineering experiences of last summer commenced with the traverse of Mount Mansfield, Vermont, in a storm. My wife and I descended its northern cliffs and found our way down a precipitous ravine for two thousand feet into Smuggler's Notch. In the Canadian Rockies we again viewed the wonders of the Yoho Valley, adding to our peaks in that vicinity the northern *arête* of Mount Marpole, an interesting climb up walls of disintegrated rock. With long journeys afoot we traversed the northern section of Glacier Park in Montana, finding no habitations, but fine mountain scenery, and we continued through Waterton Lakes Park into Canada. Afterward we visited the Pacific Coast and returned to climb the hills of Lafayette Park in Maine. Perhaps our most interesting experience was in the Teton Range south of Yellowstone Park.

Scenically, the finest approach to the wonders of the Yellowstone is by way of its eastern entrance through Shoshone Cañon. Climbing through tunnels in towering walls of gray and pink, we came to the great Shoshone dam, which has formed a lake ten miles in length. In the forest beyond there are many rocky pinnacles of fantastic form, the most beautiful group being called the Holy City. After entering the park there is a distant view from the heights of Yellowstone Lake, with the Tetons looming majestically on the horizon. After renewing our acquaintance with the exquisitely colored Grand Cañon of the Yellowstone, with its magnificent falls, we ascended Mount Washburn for its comprehensive view of the park. Visiting the hot springs and geysers, we finally left Old Faithful for the seventy-mile trip to Moran on Jackson Lake. At Yellowstone Lake we paused to view the bubbling paint-pots with their rose-colored mud. Passing Lewis Lake and river, with colorful meadows and glimpses of deer, of elk, and of moose, we came finally to the crooked Snake and the long valley of Jackson Lake. This once beautiful lake has been recently dammed for irrigation, but in raising its level the trees on its shores were left standing, so that at low water there is a large area of utter devastation. It is proposed in like manner to make res-

ervoirs of Leigh and Jenny lakes, which nestle against the base of the range to the south. These little lakes are among the most beautiful in America and should receive national protection.

From the eastern shore of Jackson Lake there is a glorious and impressive view of the Teton range, which rises Himalaya-like across the lake. Adorned with glaciers and cathedral spires, the peaks cluster about the Grand Teton, which looms above them all to the south, 13,747 feet in height. Its summit is about 7000 feet above the surrounding country. Although limited in extent, the range is peculiarly rugged and in some respects unique among American mountains. Its many unclimbed summits offer most interesting rockwork, for as yet they are almost unknown to the mountaineer. These fascinating peaks are composed of many-colored rocks and are curiously varied in form. To the south of the Grand Teton a naked gray peak seems as if it had been lassoed, for a narrow chimney springs from base to summit. On the inner cliffs of the last great peak to the north, Mount Moran, a gigantic buttress of brown rock climbs boldly to the top of the mountain. Adjacent to Yellowstone Park, and unequaled by any mountains within its borders, this splendid range should be added to the park as a fitting climax to its wonders.

Second in height in the range, Mount Moran (12,100 feet) towers above Jackson Lake, unique in its massive grandeur. While the Grand Teton had been climbed, the sheer cliffs of Mount Moran were said to be unclimbable. Several mountaineers had reached its eastern glacier, but had not gone above it, while others had circled the mountain, finding precipices on every side. Ben Sheffield, of Moran, had spent many years in hunting sheep on its crags and in seeking a route to its summit, but he had finally concluded that staples must be driven into its cliffs before it could be conquered.

Interested by these reports, we decided to have a near view of the mountain, and in a few hours after arriving at Moran we were on our way across the lake. It is about nine miles to the opposite shore. We landed by moonlight, allowing the launch to return without arrangement to call for us on the following day. Finding it unprofitable to work our way through the fallen timber, we spent the night in our sleeping-bags near the shore. As so many had failed to find a route on its eastern side, we had landed well to the north of the glacier, intending to investigate the northern face of the mountain. Early on the morning of August 11, 1919, we worked our way for

several miles through the forest tangle and up a long steep slope to the cliffs, but we found them quite inhospitable at our point of attack. It was an unusually hot day, and I was not in need of the exercise of carrying a thirty-five-pound pack, but thought it might be pleasant to visit the ice cave of the glacier. In order not to lose elevation we worked our way south across the eastern face of the mountain, crossing troublesome ravines and finally reaching the gorge at a point a few hundred feet below the glacier. Here we left our bags beneath a great rock and ascended to the ice cave, which we entered for a considerable distance. Its portal framed a view of the lake with little islands shimmering far beneath us in the heat.

Unfortunately, it was after one P.M. and avalanches were descending across the glacier, but we had insufficient provisions to allow us to remain another day, and I was desirous of examining a possible route up the very steep snow-filled couloir. In traversing the slopes I had pointed to a cabin in the distance to the south, and I mentioned that a camp was located several miles beyond, at the southern end of Leigh Lake. There are no trails in the region, but abundant evidence of bear and other animals. Leaving my wife to return to our bags, with the remark that she might remain until morning, I started up over the glacier, threading its crevasses and finding delicate work in crossing its yawning *bergschrand*, whose great chambers of blue and green led to sudden depths which I was not desirous to fathom. As I surmounted the wall above, the avalanches which I had hitherto avoided closed in on my pathway and spread out over the route of my ascent across the glacier. Boulders of many tons in weight came leaping and crashing from the heights, seeming to shake the rocks about me and passing at great speed within a few feet of my precarious foothold. As there was no alternative route up the peak in this direction, I went a little farther, concluded that there was not a fair opportunity for mountaineering skill, and reluctantly descended across the glacier while a thunder-storm was deadening the roar of the avalanches.

Deciding to climb the *aiguille* on the left of the glacier, I worked my way upward in the rain, while I studied the walls of the main peak. Discovering an opportunity to attack the cliffs near the glacier without reascending it, I hastened to descend the *aiguille* and recommenced the climb after four o'clock. Working upward into a concealed ravine, I ascended for several hundred feet to the eastern

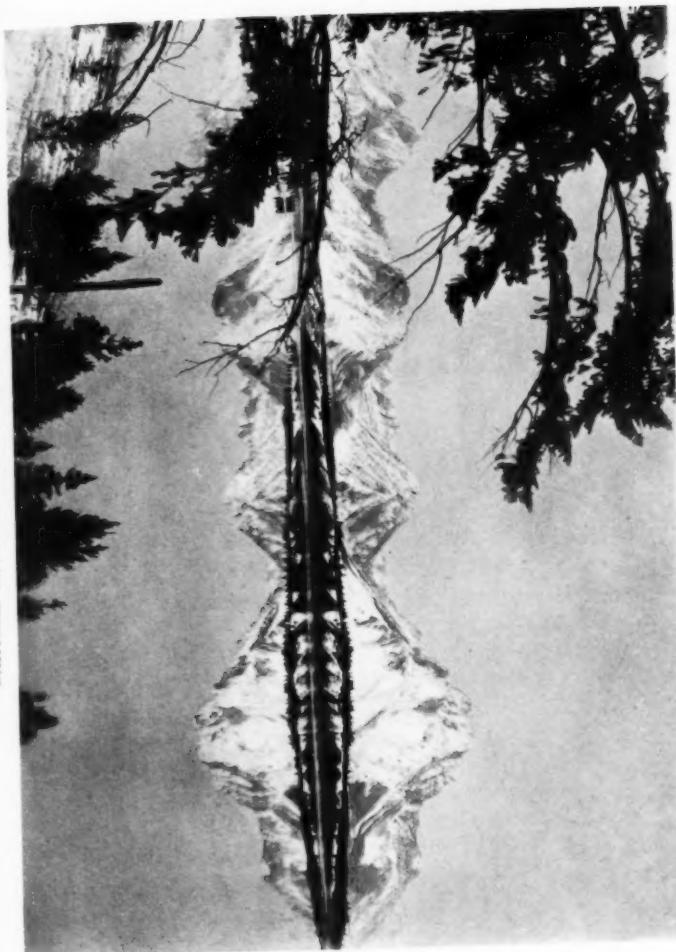
*arête* of the mountain. Following the ridge for a little distance, I enjoyed thrilling views of the glacier beneath me and of the tremendous vertical walls on its northern side. To the east was a varied and extensive panorama, beginning with little lakes and forests along the base of the range and reaching far across the desert to mountains on the horizon. Summer clouds and rainbows hovered over the valley of the Snake and thunder-storms were raging in the distance. Leaving the *arête*, I traversed the face of the mountain parallel to the glacier until I entered a long chimney. Far too soon the shadow of Moran reached over Jackson Lake, the sun set, and twilight veiled the distant view. In the failing light I forced my way upward, reaching and straddling from side to side of the chimney in search of handholds and footholds. In the absence of a companion on whose shoulders I might stand, my ice-axe was occasionally useful, although it was in the way when I surmounted a beetling crag. Here and there boulders were insecurely lodged in the chimney and I had to throw my rucksack above while I struggled to surmount them in safety. At one point it was necessary to make a short detour on the smooth, steep surface of the surrounding rock, hanging on by friction rather than by any legitimate hold. For many hundred feet I found athletic exercise which would have been more pleasurable earlier in the day. Above the chimney was a vertical cliff and slanting rocks with almost no handholds, which threatened me with an unhindered descent for thousands of feet on the northern face of the peak. Reaching the highest point of the mountain, I found a level surface, strewn with a few loose rocks, on which no foot had trod. It was possibly 150 feet in length by twenty-five in width, and from its western end I looked down to a *col* probably less than a hundred feet below me. Beyond it rose a summit of the mountain similar to the one on which I stood, but it was surmounted by a large mass of loose rocks which made it a little higher. From the lake my summit appeared the higher.

At any other time I should have crossed the *col*, but I had reached the extreme limit of human possibility. It was nine o'clock at night and darkness was upon me. Instead of moonlight, an electrical storm was sweeping toward me from the Grand Teton, and the gale was already driving its sleet furiously against me. Placing my name on a slip of paper in a tin can, I hastily piled a few stones above it, and pocketed samples of the rock. I had remained on the

ance, I  
re-  
died and  
s along  
mountains  
the val-  
distance.  
el to the  
dow of  
veiled  
pward,  
search  
ion on  
useful,  
g. Here  
I had  
them in  
on the  
oy fric-  
feet I  
ole ear-  
lanting  
an un-  
of the  
a level  
rod. It  
rom its  
red feet  
to the  
of loose  
nit ap-

reached  
t night  
ectrical  
he gale  
ng my  
stones  
on the

TETON RANGE AND JACKSON LAKE, WYOMING:  
Mount Moran at the right; Grand Teton at the left  
Photo by U. S. Reclamation Service



SHERA CLUB BULLETIN, VOL. XI.

PLATE I.





THE TETONS FROM JENNY LAKE

summit but a few moments, viewing all at a glance, and I was now to face the extreme peril of a descent in partial darkness, for the moon was veiled for several hours. Asking for Divine protection, without which I could never have descended in safety, I cautiously felt my way down the perilous upper cliff. The lack of handholds made it an exceedingly delicate undertaking, and I was considerably encouraged on reaching the head of the chimney. Facing outward, I felt for footholds and handholds, often being able to make fair progress. Finding it impossible to carry my axe, I was occasionally forced to let it drop ahead of me, with the inevitable result that it finally bounded downward, striking fire for hundreds of feet toward the glacier. This may have been providential, for I then realized that I had come too far down cliffs on which it would have been impossible to complete the descent. Climbing again to the *arête*, I retraced my route of ascent and found my ravine, but not the point where I had entered it from below. The moon had appeared, and I continued over cliffs which one would not be likely to climb by daylight, at last reaching the bed of the stream considerably below the snout of the glacier. It was tiresome work over the loose boulders and down an icy wall to the overhanging rock where I expected to find my wife and sleeping-bags. At 1.30 A.M. I arrived to find neither wife nor bags. Only the voice of the torrent responded to my calls. It seemed probable that my wife had taken our bags and gone for assistance. As I did not wish to search for a rescue party who might start to find me in the morning, I decided to travel toward the cabin we had seen in the distance.

All night long I forced my way downward along the stream, fighting the thickets of alder and willow and jumping from boulder to boulder of gigantic white quartz which had come down from the mountain. Climbing the ridge to the south, I battled in the dark with fallen timber and clung to branches to prevent falling over cliffs. As daylight approached I rested for a few moments, and then pressed on across a morass, arriving at the cabin to find it deserted. Pinned to the logs was a note from my wife that she had spent the night there. Hastening on to Leigh Lake, I shouted and heard a distant response from the western shore where my wife was fighting her way through the thickets of jack pine. After joining her we followed the eastern shore to its lower end, where we found a camp and then lay down for a few minutes' rest. I had taken almost continuous

exercise for nearly thirty hours and had climbed about 7000 vertical feet. Under ordinary conditions a competent mountaineer should not find the mountain excessively difficult—if he knows the route.

Meanwhile my wife told how she descended near the stream after we had parted at the glacier. The avalanche, which to me had seemed to spread out over the glacier, had continued down the gorge. For over fifteen minutes by her watch the great boulders had torn past her, jarring the rock beneath which she crouched. She was unable to find our bags, for they had been carried away, although we had left them far below the glacier. After climbing up and down in search of them for several hours, she worked her way to the cabin before dark.

We were soon on our way to Menor Ferry across the Snake, where we footed it for several hot miles to the main highway, secured a car, and reached Moran late that night. In forty hours I had enjoyed very little sleep, but nothing can dim my memory of the giant Tetons, soft and blue against the orange sky. Early in the morning we started on a long day's ride to the northern entrance of the Yellowstone. Regretfully we left the mountains rosy in the morning glow, while peacefully the full moon lingered over Mount Moran.

#### SPLENDORS OF THE POOR

*If rank and wealth within the mind abide,  
Then gilded dust is all your yellow gold.  
Kings in their fretted palaces grow old;  
Youth dwells forever at Contentment's side.  
A mist-cloud hanging at the river's brim,  
Pink almond flowers along the purple bough,  
A hut rose-girdled under moon-swept skies,  
A painted bridge half-seen in shadows dim,—  
These are the splendors of the poor, and thou,  
O wine of spring, the vintage of the wise.*

HSÜ KUNG T'U,  
834-908 A. D.

## YOSEMITE NATURE GUIDES

BY C. M. GOETHE, PRESIDENT CALIFORNIA NATURE STUDY LEAGUE

IT is a far cry from the spreading ancient beeches of Denmark's Royal Deer Forest to the towering yellow pines of the Yosemite Valley floor. Studies, however, made under those beeches of directed recreation of blind children, of their delighted enjoyment of the one bit of nature-study possible to them, the music of wild birds, grew into similar enjoyment last summer among the pines of the Sierras, almost antipodal to Denmark, by numbers exceeding one-sixth of the total attendance at the World Series at Cleveland.

The world survey, of which the above Danish incident was a part, began at a California orphanage. This had been wisely located, not amidst the city's din, but on a peaceful farm. Here attempts were made to develop character among the motherless through play. Efforts were made to prepare them for life's battle by using the ways of the gentle Froebel, instead of the usual withering, institutionalizing methods. Out of this orphanage laboratory came the concept that America had developed in her recreational culture some things unique, things worth offering abroad. One was the playground under direction as seen in the high-type American city. Another was the use of the American public-school plant as a day-and-night community center for grown-ups as well as for children. Europe, the world, were searched in vain to find any similar evolution. Journeys were taken by rattling *stoeljahrre* along Norwegian fiords, by sand-crunching camel across Saharan sands, by dugout canoe through rattan-festooned Javan jungles, by squeaking wheelbarrow along mucky Chinese byways, by patient elephant to where the Grand Moguls had built, planning like Titans and finishing like jewelers. These journeys opened world vistas, not only of the possibilities of such education through play, but also of internationalizing recreation, of making available for all mankind the good evolved in the recreational culture of each nation.

Out of these world-wide labors came thus one vivid concept: that America could profitably import, as well as export, crystallized recreational experience. One chapter only of the resulting history can

be opened in this space before Sierra Club eyes. That chapter is the organization of the California Nature Study League. This was aimed to test whether, as a part of this internationalizing recreation, there could be transplanted to our America the nature-study-field-excursion, which seemed the best thing evolved in the recreational culture of Nordic (or blonde) Europe.

This was therefore scrutinized from Scotland to Switzerland, from Norway to Holland. Near Melrose Abbey, whose buttresses in the pale moonlight still "show ebon and ivory," dancing-eyed little girls told of their joys on such nature-study-field-excursions. Scottish bairns called them "school treats." One sandy-haired lassie of nine, with an attractively freckled nose, gave testimony that "A picnic is only a picnic—where you wear stiff clothes and, with solemn people, drink tea under the oaks. On a school treat, however, you go out among the heather and catch butterflies and beetles, and it's so much more fun than a picnic." In the Alps green-hatted boys and velvet-bodiced girls climbed Rigi or the Rotstock for edelweiss or alpenrosen, simultaneously absorbing learning during what the wise Dr. Hetherington reminds us are, educationally, life's most precious years. Under Zuyder Zee windmills were found teachers who were born disciples of Audubon. Therefore, along brick-paved Holland dikes tiny wooden shoes clattered excitingly when an older boy found a bullfinch's nest with young. In Germany the nature-study-field-excursion, sad to relate, was found to be developed, under Hohenzollern guidance, as a part of the military machine. Sturdiness of leg muscle, stoutness of back trained to rucksack, quickness of eye in detecting coloration of flying bird, all were turned, like expert knowledge of poisonous gas in mine or in chemical *fabrik*, to further Mars' interest. But even notes of "wandervogeling" and other German phases of the nature-study-field-excursion were utilized in introducing, by means of the California Nature Study League, this bit of blonde Europe to Pacific shores.

One phase only of the league's resulting activities may be described here. That is the nature-guide movement, which utilized while walking the instinctive interest in bark-beetles, water-ouzzels, bears, gentians, dodecatheons, arctic willows, sequoias, for educational purposes, under high-power guidance. That form of play which included the love of hiking, the lure of curving trail, the primordial joy in the music of cascading water or sighing pine, the



PLATE LII.

A NATURE GUIDE EXCURSION IN YOSEMITE.  
Photo by Pillsbury



BLIND BOYS BEING TAUGHT TO IDENTIFY BIRD-SONGS  
Photo taken in the Royal Deer Park near Copenhagen, Denmark



NATURE-STUDY GROUP IN YOSEMITE



happiness of fellowship with chipmunk and with woodpecker, were made, as in similar work in blue-eyed Europe, a means of such education through play, of recalling race-old memories in the cramped city, of building for cleaner citizenship in child, adolescent, adult.

The first nature-guide experiments came in 1918 at Catalina and at Yosemite, under Dr. Harold Bryant, of the University of California and of the State Fish and Game Commission. Crude as these were, the possibilities of thus transplanting this Nordic institution to California soil were apparent. For the wider work of 1919 the string of resorts bordering Lake Tahoe in the Tahoe National Forest was selected. Resort managers there were quick to see the commercial values of the nature-guide movement. They therefore co-operated splendidly. From Tahoe Tavern to Fallen Leaf Lake were given nature-guide hikes, campfire talks, lantern-slide lectures on Sierran fauna and flora, moving pictures of California wild life. Nature-study libraries were opened at each co-operating Tahoe resort. Children were directed in nature-play along unique lines, including such blindfold games as the bark-feeling plays and the herb-smelling frolics. Director of National Parks Stephen T. Mather quietly studied the Tahoe experiment. He decided the results merited its extension into Yosemite National Park. At his 1919 Christmas party in Yosemite Village he authorized the California Nature Study League to open negotiations with the California Fish and Game Commission, which developed into the unexpectedly wide success of the 1920 Yosemite summer.

One month's season at Tahoe in 1919 was expanded at Yosemite to three months—June to August, 1920. Dr. Bryant and Dr. Loye H. Miller again were in charge. The program was developed to include occasional sleeping-bag trips into Yosemite's "Back of Beyond," those High Sierras whose treasures have become world property through the pioneering of John Muir and his associates of the early Sierra Club. A wild-flower show was continuously conducted in Yosemite Village. The nature guides assisted in entertaining practically all delegations visiting Yosemite in 1920, from the Congressional Appropriations Committee to the Board of British Drapers. Some 27,047 citizens thus made use of the 1920 Yosemite National Park Nature Guide Service.

This nature-guide movement should be solidified into a permanent institution, not only in Yosemite, but in all national, all state

parks. The 1920 Yosemite campaign became possible only when Director Mather out of his private fortune subscribed the amount necessary to be added to the sum appropriated by the State Fish and Game Commission. Under ideal conditions this contribution of Director Mather's should be replaced by Federal funds. If each Sierra Club member today would write to his two Senators and to the Representatives of his state, this ideal would be translated into an actuality. Completed would be the work begun to interest Congress therein when the Congressional Appropriations Committee explored Yosemite Park under the nature guides.

Such a modest appropriation would never be felt by the American taxpayer. In the August number of the *Scientific Monthly*, Dr. Rosa, analyzing the current congressional budget, indicates that, of a per-capita appropriation of little more than \$50, war receives \$47.99. Education of all kinds is cared for by *six cents*. To this paltry six cents per capita the addition of a thousandth of a mill for nature guides, to make more sensibly enjoyable the visit of the tens of thousands who find relaxation in our national parks, would not be noticed, even by the heads of such families as made Roosevelt smile.

## THE CAMPAIGN FOR PRIVATE FORESTRY

BY DONALD BRUCE

Division of Forestry, University of California



CALIFORNIA contains some twenty million acres of forest land. If managed under forestry principles, this area, now largely uninhabited, is capable of supporting directly an ultimate population of about one and a half million people, of supplying all the wood needed by the remaining population and industries of the state, and of producing a surplus for export to less fortunate regions farther east. Today, however, forestry is being practiced on but approximately half of this land, for this is the proportion that is in our national forests. Private owners of timberland in the past have done practically nothing toward insuring a second crop of timber.

The present agitation for an extension of the practice of forestry to privately owned timberland is therefore of great importance to this state. This movement is relatively recent, for although the need has long been realized it is only since the war that definite programs have been crystallized and urged by powerful influences. There are two main rival plans advocated (with several variants), commonly referred to as the Pinchot and the Graves-Greeley programs.

The first of these was prepared by a committee of the Society of American Foresters, of which Gifford Pinchot, the great leader of the conservation movement, formerly United States Forester, and now State Forester of Pennsylvania, was chairman. It proposes national legislation, creating a commission consisting of the Secretary of Agriculture, the Secretary of Labor, and the chairman of the Federal Trade Commission, with far-reaching power to regulate the logging of privately owned lands. Working through a system of regional organizations based largely on the existing Forest Service, this commission would be authorized to "fix standards and promulgate rules to prevent the devastation and provide for the perpetuation of forest growth"—in other words, to *compel* the practice of forestry. It would also be empowered specifically, in connection with this primary purpose, to require standardized accounting systems and periodical statistical reports, to control production in certain emergencies, to sanction co-operations of lumbermen when in the public interest, to

encourage forest-insurance agencies, to create national forest loan banks (similar to the farm loan banks), to officially recognize regional and national councils of lumber employers and employees, and establish penalties for the enforcement of the law. Provision is also made for an increase in the area of the national forests, and to authorize direct manufacture and marketing of forest products therefrom by the Forest Service.

The Graves-Greeley program is so named because it was originated by Henry S. Graves, former United States Forester, and is being supported by his successor in that position, Forester W. B. Greeley. Its provisions are as follows: 1. Federal aid to states and forest-owners in fire protection for both virgin stands and second growth; 2. A federal survey of the nation's timber resources, present and future; 3. An augmented research program by the U. S. Forest Service; 4. An increase in the area of the national forests; 5. Re-forestation of denuded areas within the national forests.

The first of the two fundamental differences between these plans is that while the former proposes coercion of timber-owners the Graves-Greeley program relies on persuasion and co-operation. In the former a national commission is to determine upon certain minimum requirements in forestry and enforce the same. In the latter direct aid will be offered in fire protection alone (which is, according to Greeley, seventy-five per cent of our forestry problem), and for the rest the National Government will limit itself to an educational campaign. This difference has been sharply emphasized, moreover, by the manner in which the two plans have been advocated. While Greeley has repeatedly consulted with representatives of the lumber industry, the proponents of the alternative method have stated from the start that education and persuasion of the lumberman have already been abundantly attempted in vain, and that only through coercion is there any hope for progress.

The second difference is in the question of national or state control. The advocates of the Pinchot plan argue that those states which have little or no forest area will suffer most from forest devastation, that only in national legislation will their influence be properly felt, and that to the lumber industry itself fairness demands a uniformity of restrictions and obligations which could not be obtained by individual state laws. On the other side is emphasized the great diversity of conditions between the different timber-producing regions, which



PLATE LIV.

AEROPHANE VIEW OF THE KAVEAH PEAKS

Showing the Big Arroyo, Mountain Lake, Upper Russian Meadows, and the Chagopon Plateau

Published through authority of Chief of Air Service. (Not to be copied.)

loan  
ze re-  
oyees,  
ion is  
nd to  
there-

origi-  
nd is  
V. B.  
s and  
econd  
esent  
orest  
Re-

plans  
s the  
a. In  
mini-  
latter  
rding  
d for  
ional  
over,  
While  
mber  
from  
re al-  
ough

con-  
which  
ation,  
felt,  
mity  
indi-  
ersity  
which



AEROPLANE VIEW OF MIDDLE FORK OF KINGS RIVER

Showing Tehuipite Dome, the Pallsades, and the Monarch Dome.

Photo by Fifteenth Aerial Photographic Section, Air Service, U. S. Army

Published through authority of Chief of Air Service. (Not to be republished.)

would make difficult any centralized control, and the probability of conflicts in jurisdiction between the nation and the individual states.

The professional foresters of the country are divided in opinion on the relative merits of these two plans. A referendum vote by the Society of American Foresters apparently indicates that a slight majority favors national coercive legislation. The lumbermen have very naturally rallied to the support of the more moderate alternative, some because they heartily believe in its wisdom, and others, perhaps, because they see in it the lesser of two evils. Whatever the reason, they are active in support of the Graves-Greeley plan.

Both programs will be before the next Congress. The former has already been crystallized into the Capper Bill (Senate Bill 4424), and the latter will be introduced later in the form of definite legislation. So much influence has already been mobilized behind both plans that some action is confidently expected.

In the meantime, and without waiting for the National Government to act, considerable progress is being made in California. A notable example is in connection with the so-called "light-burning" controversy. For many years there has been carried on at times a rather acrimonious dispute over the wisdom of the fire-protection plan of the United States Forest Service. Its opponents claimed that it was a mistake to attempt to completely eliminate fires from our forests, since in their absence inflammable "debris" (under which term were often included young trees) would accumulate until at last a holocaust would be inevitable. This the Forest Service denied, and insisted that even a "light" fire caused more damage than was appreciated by the casual observer. The controversy seemed to be resulting in nothing but hard feeling until about a year ago, when a joint committee was formed to study this problem scientifically, composed of representatives of the Forest Service, the State Forester's office, the Sierra Lumbermen's Association, the Southern Pacific Railroad (as the largest timberland-owner), and the Division of Forestry of the University of California. This committee has not yet announced any conclusions, but considerable progress has been made, and the question has been removed from the realm of controversy into that of harmonious scientific investigation. Since adequate fire protection is an essential foundation to any system of forestry, this may be considered valuable progress, and obviously along the lines of the Graves-Greeley plan.



The State Forestry Commission has moreover announced a progressive program which it is going to ask the legislature to support. It involves increased expenditures for fire protection of timberlands outside the boundaries of the national forests, in co-operation with the counties and private owners on the one hand, and with the National Government on the other, and the initiation of a system of state forests through the purchase of desirable cut-over land. This program was discussed recently before a meeting of representative lumbermen and foresters which unanimously indorsed it. The commission also urged an extension of the work of the joint committee already referred to, to cover any other disputed questions which might be presented to it, and in preparation for such work a representative of the Redwood Lumbermen's Association has been added.

The lumbermen of the state, too, are (although in as yet rather too local and individual instances) commencing to take steps toward putting their industry on a permanent forestry basis. The Union Lumber Company, for example, which has for many years done admirable pioneer work in the fire protection of its virgin timber, has recently called on the University of California for advice in the handling of its cut-over land. In accordance therewith, it is now planning to extend its fire-protective system to this land, and to conduct a series of experiments on natural and artificial methods of reproduction. The Fruit Growers Supply Company, to mention another instance, is negotiating an agreement with the Forest Service which will probably result in the cutting of the timber tributary to its new sawmill at Susanville in complete accordance with the silvicultural methods in effect on national forest land. Practically all the lumber companies, moreover, whose lands are within the boundaries of the national forests are co-operating with the Forest Service in fire protection of both virgin timber and cut-over land by contributing a pro-rata sum of money based on their acreage.

So it may be seen that the movement toward private forestry is gaining headway. National legislation either compelling or encouraging it may confidently be expected in the near future, and in the meantime, without waiting for Congress to act, California is going ahead on her own account and is preparing to make true progress in solving a problem of national importance.

## THE 35th DIVISION IN THE VOSGES MOUNTAINS

BY COLONEL N. F. MCCLURE, CAVALRY  
(Brigadier-General, National Army)

FOR centuries the Vosges Mountains have been famous in folklore, song, and story. They lie in western Alsace and southern Lorraine. From their eastern slopes flow the Thur, the Fecht, the Weiss, and many other tributaries of the Ill and the upper Rhine. In the lakes and springs of the western slopes the Meurthe, the Moselle, the Verouze, and the Montagne find their sources. The whole country is one of splendid grandeur.

Among these hills the fires of patriotism and personal liberty early began to burn. Many years before the French Revolution the people of Alsace had taken steps to establish and guarantee their civil rights. They gave the most loyal support to the government established by the Directory of the Revolution, and to those of the Consulate and the Empire which followed. During this period eighteen Alsatians arose to the rank of general officer, and two, Dumouriez and Hoche, became commanders of armies.

The sector occupied by the 35th Division was located in one of the most beautiful sections of the Vosges Mountains. In it lay many picturesque villages. Some of these had been destroyed by artillery fire. Division headquarters were first at Wesserling and later at Krüth, both villages in the valley of the Thur. There are many other towns in the same valley, each with a certain wild beauty of its own.

Krüth was the rail-head for the French troops in this sector. From this town a narrow-gauge railway and a fine automobile road lead westward, through the Col de Boussang, to Le Thillot and Remiremont. This trip is one of unexcelled beauty for the tourist. Our own sector was replete with wonderful natural features, but the exigencies of war did not permit us to fully enjoy them.

The De Galbert sub-sector, where our line began on the south, lies among the high mountains just north of the "Ballon de Guebwiller," the highest of all the Alsatian "ballons." The elevation is 1426 meters (4700 feet). These ballons will be described more in

detail later. Five kilometers southeast of the Guebwiller Ballon lies that terrible mountain, Hartmanweilerskopf, where so many gallant men laid down their lives. I will explain why this came to be regarded as such an important point.

Early in August, 1914, the French drove forward into Alsace and captured the main ridge of the Vosges from Bon Homme Pass, south of Saint Dié, to Le Rheinkopf. They also secured possession of the high ridge which shoots off to the southeast from Le Rheinkopf and extends as far as Thann. The later ridge lies to the east of the famous valley of the Thur. These preliminary successes gave the French great advantages in terrestrial observation, which they maintained until the end of the war. From these heights they could keep a splendid watch on the country below them occupied by the Germans. The latter were quick to realize the handicap which they suffered, and they promptly adopted a policy of attempting to hold a number of detached hills to the east of these mountain ridges, in order that they might be able to get some counter-observation of the terrain occupied by the French to the east of the main ridge. The possession of these peaks, however, only partly overcame the disadvantages under which they labored, but they sacrificed thousands of men to hold them. As luck would have it, the terrain of our sector lying to the east of the main ridge, except the southern part, was not particularly well wooded. For this reason our movements from the main ridge to our front line, with the exception noted, had to be made under cover of darkness.

The enemy had superiority in artillery when we first went in, and it was not safe to provoke him to use it by showing ourselves. We were liable to start something which we were powerless to stop. The Germans made strenuous efforts to seize and hold the detached hills referred to above, and terrific combats were thus brought about whenever an attempt was made to dislodge them. Such places changed hands frequently in the early part of the war, and for this reason they became known as "friction-points." Hartmanweilerskopf was the most terrible of all. Thousands upon thousands of French and German soldiers laid down their lives there in fruitless struggles. The French were the heaviest losers, because the Germans, particularly in the early part of the war, not only had more guns, but guns of longer range and heavier caliber. We had a number of these friction-points along our front, but none of these had the

ghastly array of casualties to its credit that Hartmanweilerskopf had.

At the north end of the De Galbert sector was Hilsenfirst, where Company "H" of the 138th Infantry, at dusk on July 6, 1918, put over our first raid. It was our opening clash with the Germans, and, measured by the scales of war, it was a great success. After destroying a number of hostile dugouts and machine-gun nests, and killing probably twenty-five of the enemy, our company returned with seven prisoners. Our loss was four killed and fourteen wounded, and we brought back all our men. Not an American, living or dead, fell into the enemy's hands. We found out what troops were opposed to us and left no information of ourselves in the enemy's hands.

From Hilsenfirst our line, closely paralleling that of the Germans, descended 1500 feet into the valley of the South Fork of the Fecht, and then rose abruptly 1000 feet to Braunkopf, another hill five kilometers north of Hilsenfirst. The valley of the South Fork is so deep that it would be called by us a cañon. It is very beautiful, and, unlike the greater part of our sector, it was well wooded. The country was so rugged that our supplies were carried to the top of the main ridge by an aerial tram and thence down the wooded mountain slopes by pack-mules to the company kitchens. After the food was cooked at the kitchens it was carried by hand to the troops in the trenches in cans, called *marmites*, each holding about five gallons. In the wintertime, when the snows were heavy, large dogs, similar to those of the Esquimaux, hauled the supplies to the kitchens on sleds and the pack-mules rested in warm stables at Krüth.

Packs of these dogs were kept carefully all summer in the valley of the Thur in order that they might be available for the winter work. As soon as the first heavy snow came the dogs were transferred to the mountains and put to work transporting rations and ammunition to the front on sleds.

From Braunkopf the line continued north, along the eastern slopes of Altmannkopf, to the Saddle (Sattel). Just east of this lay the Reichacker hill, another one of the friction-points, almost as famous, or "infamous," as was Hartmanweilerskopf. In this vicinity the terrain had once been well timbered, but the German shell-fire had destroyed nearly all the trees. A few stumps, stripped of branches, alone remained standing. To get to this part of the front without showing themselves the French had constructed more than a

mile of tunnel. One night a German patrol got inside the French lines, threw a lot of gas-bombs down the ventilators of this tunnel, and gassed 400 Cochín-Chinese troops who were coming in to relieve the French troops. Of these 240 died. This was a ghastly night's work.

After leaving the Saddle, the line crossed the splendid cañon of the North Fork of the Fecht. The terrain here is very wild and rugged and about half of it is timbered. A fine automobile road from Münster winds up this cañon to the Col de la Schlucht (Ravine Pass), and thence down, past Lake Longemer, to Gerardmer City and lake. This route is considered one of the most picturesque of the Vosges.

After crossing the North Fork of the Fecht our line continued on generally north, through the friction-points of the Geisberg and Le Linge, to the small stream flowing east from Le Lac Blanc. Here it joined on to that of the French troops in the Bon Homme Pass sector. The country north of the North Fork of the Fecht is more open and not as beautiful as the other parts of our sector. Here, too, a long tunnel had been constructed to conceal the movements of our troops to and from the front. Many acres of timber had been destroyed in this neighborhood by shell-fire. In the vicinity of White and Black lakes the country is very rugged, and these bodies of water resemble some of those of our Sierra Nevada. I am not a good enough geologist, however, to say that they are of glacial origin.

The road leading down to these lakes from the pass in the main ridge was bombarded daily by the Germans. My car, which was a Winton-Six, painted black, once broke down on a slope of this road visible from certain observation stations within the German lines. It took my chauffeur about five minutes to get the engine started again. To me it seemed much longer. Fortunately the German observation was defective that morning and we got started before they opened fire. This road, torn by shell-fire and fringed here and there with timber, dead or dying from the same cause, is one of the few inhospitable and forbidding spots associated with my recollections of the Vosges.

As stated before, the advantageous terrain at certain friction-points was held by the Germans, and we were forbidden to attempt to dislodge them, as eventually this would have involved a major operation, and General Foch did not want to have his plans of

breaking the German lines interfered with. Had we brought on heavy fighting, it would probably have been necessary to rush considerable forces to our support. The Allied High Command was very anxious to have matters remain as quiet as possible in the Vosges in order that attention might not be diverted from the main issues of the campaign by minor disturbances, which could exercise little influence on the ultimate result. It is difficult to give the soldier the necessary training to make of him a good fighting man, but having done this, it is not less difficult to convince him, after he has been brought face to face with the enemy, that he is not to fight, even though constantly harassed by hostile artillery fire.

It must not be gathered from what has been said above that our life in the Vosges was without excitement. Hostile bombing-planes sometimes dropped quantities of high explosives on our headquarters and dugouts and frequently attacked our supply depots and billets behind the line. Some part of our front was nearly always under shell-fire. Raids were frequently instituted by both ourselves and the Germans to destroy parts of the opposing works and bring back prisoners. Our raid at Hilsenfirst has been described above.

This article would be incomplete without a description of the "Ballons d'Alsace," a name applied to a number of high rounded mountains of the Vosges, from which may be obtained fine views of the surrounding country. Several reasons are given for their being called "ballons," but the one having the most weight is that founded upon their resemblance, as one glances over the terrain, to the rounded "top-sides" of a group of balloons. They are not timbered on the summit, but the slopes are often covered with beech and pine. Early in August, 1918, I was summoned to Belfort to witness a demonstration of a new six-inch field mortar about to be adopted by the French. The shortest and also the best route lay to the south through Le Thillot and Saint Maurice. Five kilometers south of the latter village, the road passed within half a mile of the summit of the Ballon d'Alsace, the most famous but not the highest of all the ballons. Its elevation is over 4000 feet. Needless to say, I seized this opportunity to get what is considered one of the finest views in all Europe. I was disappointed the day I made the ascent to find the field of vision much obstructed by the hazy atmosphere. Points more than ten miles away were quite indistinct and those over twenty miles away were practically invisible. Beyond this all was but

conjecture, and my map only could give a clue as to what lay outside the limit of vision. I am told that the Rhine can be seen in fine weather, and also the mountains of Switzerland. The view is one which I will not attempt to describe further. I believe that I have said enough to indicate that it is one of splendid grandeur.

All through the Vosges Mountains are wonderful automobile roads. The tourist who does not care to do the mountains on foot can visit many points of interest in machines without much exertion. To those who hanker for the strenuous life there are hundreds of miles of footpaths, of all varieties of steepness and ruggedness, to tempt them.

It is probable that many members of the Sierra Club will visit Europe in the years to come. To all such I would say, "Do not fail to see the Vosges Mountains, for there is a beauty, a grandeur, and a series of historical associations connected with them which make them one of the most remarkable and enjoyable regions of the world for the mountain-climber."

It is not considered inappropriate to say something here of the wonderful men of the 35th Division whom I commanded in the Vosges. They did not seem to know what fear was. All that was necessary was to tell them what to do, and they would do it if it were humanly possible. The Germans early sensed this moral force and realized that they could not conquer it. Recent events have led me to fear that perhaps we are forgetting why our men went abroad and the sacrifices they made. This I attribute to the reaction following the war, and I have enough faith in our institutions to hold the opinion that this will be followed in turn by a counter-reaction which will bring us to a sane basis.





PLATE XVI.

LAKE AT HEAD OF RAMBAUD CREEK, MIDDLE FORK OF KINGS RIVER  
Photo by Frederick H. Stoddy



HEADWATERS OF THE MIDDLE FORK OF KINGS RIVER FROM MUIR PASS  
Photo by Rodney L. Gilman

## STUDIES IN THE SIERRA\*

BY JOHN MUIR

NO. VII.—MOUNTAIN-BUILDING



THIS study of mountain-building refers particularly to that portion of the range embraced between latitudes  $36^{\circ} 30'$  and  $39^{\circ}$ . It is about 200 miles long, sixty wide, and attains an elevation along its axis of from 8000 to nearly 15,000 feet above the level of the sea. The individual mountains that are distributed over this vast area, whether the lofty and precipitous alps of the summit, the more beautiful and highly specialized domes and mounts dotted over the undulating flanks, or the huge bosses and angles projecting horizontally from the sides of cañons and valleys, have all been sculptured and brought into relief during the glacial epoch by the direct mechanical action of the ice-sheet, with the individual glaciers into which it afterward separated. Our way to a general understanding of all this has been made clear by previous studies of valley formations—studies of the physical characters of the rocks out of which the mountains under consideration have been made, and of the widely contrasted methods and quantities of glacial and post-glacial denudation.

Notwithstanding the accessibility and imposing grandeur of the summit alps, they remain almost wholly unexplored. A few nervous raids have been made among them from random points adjacent to trails, and some of the more easily accessible, such as mounts Dana, Lyell, Tyndall, and Whitney, have been ascended, while the vast wilderness of mountains in whose fastnesses the chief tributaries of the San Joaquin and Kings rivers take their rise, have been beheld and mapped from a distance, without any attempt at detail. Their echoes are never stirred even by the hunter's rifle, for there is no game to tempt either Indian or white man as far as the frosty lakes and meadows that lie at their bases, while their avalanche-swept and crevassed glaciers, their labyrinths of yawning gulfs and crumbling precipices, offer dangers that only powerful motives will induce anyone to face.

\* Reprinted from *The Overland Monthly* of January, 1875.

The view southward from the colossal summit of Mount Humphreys is indescribably sublime. Innumerable gray peaks crowd

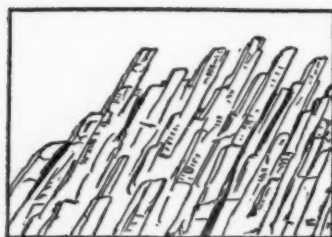


FIG. 1

loftily into the keen azure, infinitely adorned with light and shade; lakes glow in lavish abundance around their bases; torrents whiten their denuded gorges; while many a glacier and bank of fountain *névé* leans back in their dark recesses. Awe-inspiring, however, as these vast mountain assemblies

are, and incomprehensible as they may at first seem, their origin and the principal facts of their individual histories are problems easily solved by the patient student.

Beginning with pinnacles, which are the smallest of the summit mountainets: no geologist will claim that these were formed by special upheavals, nor that the little chasms which separated them were formed by special subsidences or rivings asunder of the rock; because many of these chasms are as wide at the bottom as at the top, and scarcely exceed a foot in depth; and many may be formed artificially by simply removing a few blocks that have been loosened.

The Sierra pinnacles are from less than a foot to nearly a thousand feet in height, and in all the cases that have come under my observation their forms and dimensions have been determined, not by cataclysmic fissures, but by the gradual development of orderly joints and cleavage planes, which gave rise to leaning forms where the divisional planes are inclined, as in Figure 1, or to vertical

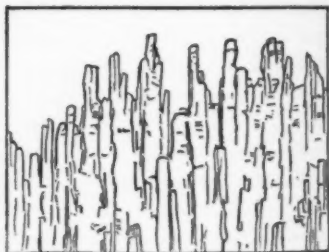


FIG. 2

where the planes are vertical, as in Figure 2. Magnificent crests tipped with leaning pinnacles adorn the jagged flanks of Mount Ritter, and majestic examples of vertical pinnacle architecture abound among the lofty mountain cathedrals on the heads of Kings and Kern rivers. The minarets to the south of Mount Ritter are an imposing series of partially

separate pinnacles about 700 feet in height, set upon the main axis of the range. Glaciers are still grinding their eastern bases, illustrating in the plainest manner the blocking out of these imposing features from the solid. The formation of small peaklets that roughen the flanks of large peaks may in like manner be shown to depend, not upon any up-thrusting or down-thrusting forces, but upon the orderly erosion and transportation of the material that occupied the intervening notches and gorges.

The same arguments we have been applying to peaklets and pinnacles are found to be entirely applicable to the main mountain peaks; for careful detailed studies demonstrate that as pinnacles are separated by eroded chasms, and peaklets by notches and gorges, so the main peaks are separated by larger chasms, notches, gorges, valleys, and wide ice-womb amphitheaters. When across hollows we examine contiguous sides of mountains, we perceive that the same mechanical structure is continued across intervening spaces of every kind, showing that there has been a removal of the material that

once filled them—the occurrence of large veins oftentimes rendering this portion of the argument exceedingly conclusive, as in two peaks of the Lyell group (Fig. 3), where the wide veins, N N, are continued across the valley from peak to peak. We frequently find rows of pinnacles set upon a base,

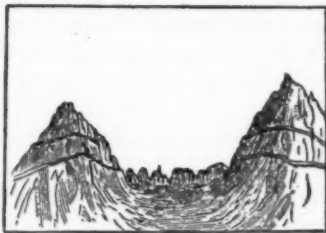


FIG. 3

the cleavage of which does not admit of pinnacle formation, and in an analogous way we find immense slate mountains, like Dana and Gibbs, resting upon a plain granite pavement, as if they had been formed elsewhere, transported and set down in their present positions, like huge erratic boulders. It appears, therefore, that the loftiest mountains as well as peaklets and pinnacles of the summit region are residual masses of the once solid wave of the whole range, and that all that would be required to unbuild and obliterate these imposing structures would simply be the filling up of the labyrinth of intervening chasms, gorges, cañons, etc., which divide them, by the restoration of rocks that have disappeared. Here the important question comes up, What has become of the missing material, not the

millionth part of which is now to be seen? It has not been engulfed, because the bottoms of all the dividing valleys and basins are unmistakably solid. It must, therefore, have been carried away; and because we find portions of it scattered far and near in moraines, easily recognized by peculiarities of mineralogical composition, we infer that glaciers were the transporting agents. That glaciers have brought out the summit peaks from the solid with all their imposing architecture, simply by the formation of the valleys and basins in which they flowed, is a very important proposition, and well deserves careful attention.

We have already shown, in studies Nos. III and IV, that all the valleys of the region under consideration, from the minute striae and scratches of the polished surface less than a hundredth part of an inch in depth, to the Yosemite gorges half a mile or more in depth, were all eroded by glaciers, and that post-glacial streams, whether small glancing brooklets or impetuous torrents, had not yet lived long enough to fairly make their mark, no matter how unbounded their eroding powers may be. Still, it may be conjectured that preglacial rivers furrowed the range long ere a glacier was born, and that when at length the ice-winter came on with its great skyfuls of snow, the young glaciers crept into these river channels, overflowing their banks, and deepening, widening, grooving, and polishing them without destroying their identity. For the destruction of this conjecture it is only necessary to observe that the trends of the present valleys are strictly glacial, and glacial trends are extremely different from water trends; preglacial rivers could not, therefore, have exercised any appreciable influence upon their formation.

Neither can we suppose fissures to have wielded any determining influence, there being no conceivable coincidence between the zigzag and apparently accidental trends of fissures and the exceedingly specific trends of ice-currents. The same argument holds good against primary foldings of the crust, dislocations, etc. Finally, if these valleys had been hewn or dug out by any preglacial agent whatever, traces of such agent would be visible on mountain masses which glaciers have not yet segregated; but no such traces of valley beginnings are anywhere manifest. The heads of valleys extend back into mountain masses just as far as glaciers have gone and no farther.

Granting, then, that the greater part of the erosion and transpor-

tation of the material missing from between the mountains of the summit was effected by glaciers, it yet remains to be considered what agent or agents shaped the upper portions of these mountains, which bear no traces of glacial action, and which probably were always, as they now are, above the reach of glaciers. Even here we find the glacier to be indirectly the most influential agent, constantly eroding backward, thus undermining their bases, and enabling gravity to drag down large masses, and giving greater effectiveness to the winter avalanches that sweep and furrow their sides. All the summit peaks present a crumbling, ruinous, unfinished aspect. Yet they have suffered very little change since the close of the glacial period, for if denudation had been extensively carried on, their separating pits and gorges would be choked with *débris*; but, on the contrary, we find only a mere sprinkling of post-glacial *detritus*, and that the streams could not have carried much of this away is conclusively shown by the fact that the small lake-bowls through which they flow have not been filled up.

In order that we may obtain clear conceptions concerning the methods of glacial mountain-building, we will now take up the formation of a few specially illustrative groups and peaks, without, however, entering into the detail which the importance of the subject deserves.

The Lyell group lies due east from Yosemite Valley, at a distance of about sixteen miles in a straight course. Large tributaries of the Merced, Rush, Tuolumne, and San Joaquin rivers take their rise amid its ice and snow. Its geographical importance is further augmented by its having been a center of dispersal for some of the largest and most influential of the ancient glaciers. The traveler who undertakes the ascent of Mount Lyell, the dominating mountain of the group, will readily perceive that, although its summit is 13,200 feet above the level of the sea, all that individually pertains to it is a small residual fragment less than a thousand feet high, whose existence is owing to slight advantages of physical structure and position with reference to the heads of ancient glaciers, which prevented its being eroded and carried away as rapidly as the common mountain mass circumjacent to it.

Glacier wombs are rounded in a horizontal direction at the head, for the same reason that they are at the bottom; this being the form that offers greatest resistance to glacial erosion. The semicircular



outline thus determined is maintained by the glaciers in eroding their way backward into the mountain masses against which they head; and where these curved basins have been continued quite

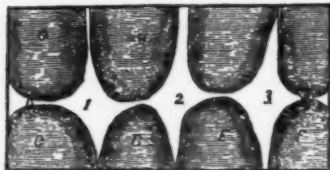


FIG. 4

through the axis of the chain or spur, separate mountains have been produced, the degree of whose individuality depends upon the extent and variation of this erosion. Thus, let A B (Fig. 4) represent a section of a portion of the summit of a mountain chain, and C D E F G H, etc., the wombs of glaciers dead or active, then the residual masses 1 2 3 will be the so-called mountains.

It may well excite surprise that snow collected in these fountain-wombs should pass so rapidly through the *névé* condition, and begin to erode at the very head; that this, however, was the case is shown by unmistakable traces of that erosion upon the sides and heads as well as bottoms of wombs now empty. The change of climate which broke up the glacial winter would obviously favor the earlier transformation of snow into eroding ice, and thus produce the present conditions as necessary consequences.

The geological effects of shadows in prolonging the existence and in guiding and intensifying the action of portions of glaciers are manifested in moraines, lake-basins, and the difference in form and sculpture between the north and south sides of mountains and valleys. Thus, the attentive observer will perceive that the architecture of deep valleys trending in a northerly and southerly direction, as Yosemite, abounds in small towers, crests, and shallow flutings on the shadowy south side, while the sun-beaten portions of the north walls are comparatively plain. The finer sculpture of the south walls is directly owing to the action of *small shadow-glacierets*—which lingered long after the disappearance of the main glaciers that filled the valleys from wall to wall.

Every mountaineer and Indian knows that high mountains are more easily ascended on the south than on the north side. Thus, the Hoffmann spur may be ascended almost anywhere from the south on horseback, while it breaks off in sheer precipices on the north. There is not a mountain peak in the range which does not bear wit-

ness  
whic  
erati  
mou  
5 is  
port

d  
a  
b  
A  
a  
n  
c  
e  
c  
s  
c  
v

ness in sculpture and general form to this glacial-shadow action, which in many portions of the summit may still be observed in operation. But it is only to the effects of shadows in the segregation of mountain masses that I would now direct special attention. Figure 5 is a map of the Merced range adjacent to Yosemite Valley, with a portion of the ridge which unites it to the main axis. The arrows in-

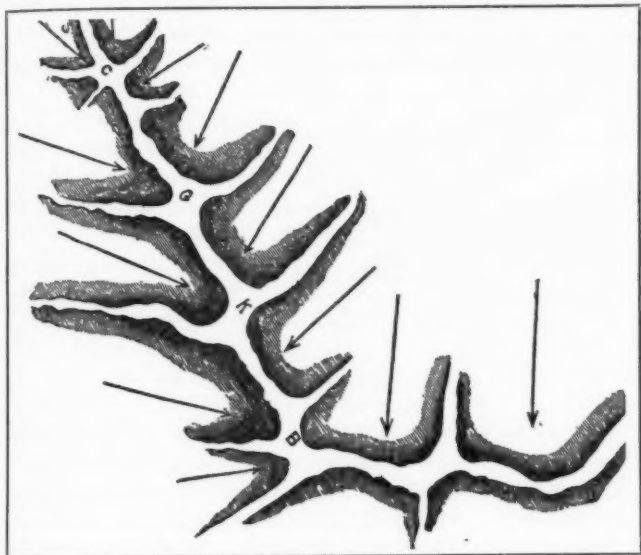


FIG. 5

dicating the direction of extension of the deep glacial amphitheaters, and it will be at once seen that they all point in a southerly direction beneath the protection of shadows cast by the peaks and ridges. Again, it will be seen that because the Merced spur (S P) trends in a northerly direction, its western slopes are in shadow in the forenoon, its eastern in the afternoon, consequently it has a series of glacial wombs on *both* sides; but because the ridge (P G) trends in an easterly direction, its southern slopes are scarcely at all in shadow, consequently deep glacial wombs occur *only* upon the *northerly* slopes. Still further, because the Merced spur (S P) trends several degrees west of north, its eastern slopes are longer in shadow than the western, consequently the ice-wombs of the former are deeper and

their head-walls are sheerer; and in general, because the main axis of the Sierra has a northwesterly direction, the summit peaks are more precipitous on the eastern than on the western sides.

In the case of ice-wombs on the north side of a mountain equally shadowed on the east and west, it will be found that such wombs, other conditions being equal, curve back in a direction a little to the west of south, because forenoon sunshine is not so strong as afternoon sunshine. The same admirable obedience to shadows\* is conspicuous in all parts of the summits of the range. Now, *glaciers are the only eroders that are thus governed by shadows.*

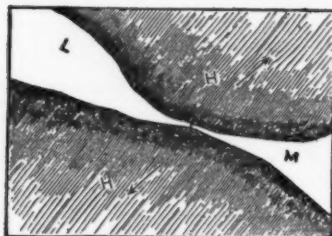


FIG. 6

Figure 6 is a section illustrating the mode in which the heads (H H) of tributaries of the Tuolumne and Merced glaciers have eroded and segregated the mountain mass (LM) into two mountains—namely, Lyell and McClure—by moving backward until they met at C, leaving only the thin crest as it now exists.

Mount Ritter lies a few miles to the south of Lyell, and is readily accessible to good mountaineers by way of the Mono plains. The student of mountain-building will find it a kind of text-book, abounding in wonderfully clear and beautiful illustrations of the principles of Sierra architecture we have been studying. Upon the north flank a small active glacier may still be seen at work blocking out and separating a peak from the main mass, and its whole surface is covered with clearly cut inscriptions of the frost, the storm-wind, and the avalanche. Though not the very loftiest, Ritter is to me far the noblest mountain of the chain. All its neighbors stand well back, enabling it to give full expression to its commanding individuality; while living glaciers, rushing torrents, bright-eyed lakes, gentian meadows; flecks of lily and anemone, shaggy thickets and groves, and polleny zones of sun-filled *compositae*, combine to irradiate its massive features, and make it as beautiful as noble.

The Merced spur (see Fig. 5), lying about ten miles to the south—

\* For further illustrations of the above observations on shadows, I would refer the reader to Gardiner and Hoffman's map of the Sierra adjacent to Yosemite Valley, or, still better, to the mountains themselves.

east of Yosemite Valley and about the same distance from the main axis, presents a finely individualized range of peaks, 11,500 to 12,000 feet high, hewn from the solid. The authors of this beautiful piece of sculpture were two series of tributaries belonging to the glaciers of the Nevada and Illilouette.

The truly magnificent group of nameless granite mountains stretching in a broad swath from the base of Mount Humphreys forty miles southward, is far the largest and loftiest of the range. But when we leisurely penetrate its wild recesses, we speedily perceive that, although abounding in peaks 14,000 feet high, these, individually considered, are mere pyramids, 1000 to 2000 feet in height, crowded together upon a common base, and united by jagged columns that swoop in irregular curves from shoulder to shoulder. That all this imposing multitude of mountains was chiseled from one grand preglacial mass is everywhere proclaimed in terms understandable by mere children.

Mount Whitney lies a few miles to the south of this group, and is undoubtedly the highest peak of the chain, but, geologically or even scenically considered, it possesses no special importance. When beheld either from the north or south, it presents the form of a helmet, or, more exactly, that of the Scotch cap called the "Glengarry." The flattish summit curves gently toward the valley of the Kern on the west, but falls abruptly toward Owens River Valley on the east, in a sheer precipice near 2000 feet deep. Its north and southeast sides are scarcely less precipitous, but these gradually yield to accessible slopes, round from southwest to northwest. Although highest of all the peaks, Mount Whitney is far surpassed in colossal grandeur and general impressiveness of physiognomy, not only by Mount Ritter, but by mounts Dana, Humphreys, Emerson, and many others that are nameless. A few meadowless lakes shine around its base, but it possesses no glaciers, and, toward the end of summer, very little snow on its north side, and none at all on the south. Viewed from Owens Valley, in the vicinity of Lone Pine, it appears as one of many minute peaklets that adorn the massive uplift of the range like a cornice. Toward the close of the glacial epoch, the gray porphyritic summit of what is now Mount Whitney peered a few feet above a zone of *névé* that fed glaciers which descended into the valleys of the Owens and Kern rivers. These, eroding gradually deeper, brought all that specially belongs to Mount Whitney into relief. Instead of a vast

upheaval, it is merely a remnant of the common mass of the range, which, from relative conditions of structure and position, has suffered a little less degradation than the portions circumjacent to it.

Regarded as measures of mountain-building forces, the results of erosion are negative rather than positive, expressing more directly what has *not* been done than what *has* been done. The difference between the peaks and the passes is not that the former are elevations, the latter depressions; both are depressions, differing only in degree. The abasement of the peaks having been effected at a slower rate, they were, of course, left behind as elevations.

The transition from the spiky, angular summit mountains to those of the flanks with their smoothly undulated outlines is exceedingly well marked; weak towers, pinnacles, and crumbling, jagged crests at once disappear,\* leaving only hard, knotty domes and ridge-waves as geological illustrations, on the grandest scale, of the survival of the strongest.

Figure 7 illustrates, by a section, the general cause of the angularity of summit mountains, and curvedness of those of the flanks;

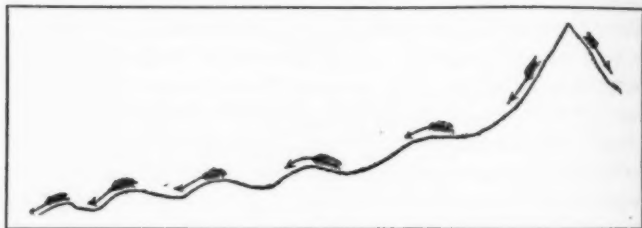


FIG. 7

the former having been *down-flowed*, the latter *over-flowed*. As we descend from the alpine summits on the smooth pathways of the ancient ice-currents, noting where they have successively denuded the various rocks—first the slates, then the slaty-structured granites, then the curved granites—we detect a constant growth of specialization and ascent into higher forms. Angular masses, cut by cleavage planes begin to be comprehended in flowing curves. These masses, in turn, become more highly organized, giving rise by the most gradual approaches to that magnificent dome scenery for which the Sierra is unrivaled. In the more strongly specialized granite regions,

\* For exceptions to this general law, real or apparent, see Study No. I.

the features, and, indeed, the very existence, of overflowed mountains are in great part due neither to ice, water, nor any eroding agent whatsoever, but to building forces—crystalline, perhaps—which put them together and bestowed all that is more special in their architectural physiognomy, while they yet lay buried in the common fountain mass of the range.

The same silent and invisible mountain-builders performed a considerable amount of work upon the down-flowed mountains of the summit, but these were so weakly put together that the heavy hand of the glacier shaped and molded, without yielding much compliance to their undeveloped forms. Had the unsculptured mass of the range been everyway homogeneous, glacial denudation would still have produced summit mountains, differing not essentially from those we now find, but the rich profusion of flank mountains and mountainets, so marvelously individualized, would have had no existence, as the whole surface would evidently have been planed down into barren uniformity.

Thus the want of individuality which we have been observing among the summit mountains is obviously due to the comparatively uniform structure and erodibility of the rocks out of which they have been developed; their forms in consequence being greatly dependent upon the developing glaciers; whereas the strongly structured and specialized flank mountains, while accepting the ice-currents as developers, still defended themselves from their destructive and form-bestowing effects.

The wonderful adaptability of ice to the development of buried mountains, possessing so wide a range of form and magnitude, seems as perfect as if the result of direct plan and forethought. Granite crystallizes into landscapes; snow crystallizes above them to bring their beauty to the light. The grain of no mountain oak is more gnarled and interfolded than that of Sierra granite, and the ice-sheet of the glacial period is the only universal mountain eroder that works with reference to the grain. Here it smooths a pavement by slipping flatly over it, removing inequalities like a carpenter's plane; again it *makes* inequalities, gliding moldingly over and around knotty dome-clusters, groping out every weak spot, sparing the strong, crushing the feeble, and following lines of predestined beauty obediently as the wind.

Rocks are brought into horizontal relief on the sides of valleys

wherever superior strength of structure or advantageousness of position admits of such development, just as they are elsewhere in a vertical direction. Some of these projections are of a magnitude that well deserves the name of *horizontal mountain*. That the variability of resistance of the rocks themselves accounts for the variety of these horizontal features is shown by the prevalence of this law. *Where the uniformity of glacial pressure has not been disturbed by the entrance of tributaries, we find that where valleys are narrowest their walls are strongest; where widest, weakest.*

In the case of valleys with sloping walls, their salient features will be mostly developed in an oblique direction; but neither horizontal nor oblique mountainets or mountains can ever reach as great dimensions as the vertical, because the retreating curves formed in weaker portions of valley walls are less eroded the deeper they become, on account of receiving less and less pressure, while the alternating salient curves are more heavily pressed and eroded the farther they project into the past-squeezing glacier; thus tending to check irregularity of surface beyond a certain limit, which limit is measured by the resistance offered by the rocks to the glacial energy brought to bear upon them. So intense is this energy in the case of large steeply inclined glaciers, that many salient bosses are broken off on the lower or down-stream side with a fracture like that produced by blasting. These fractures occur in all deep Yosemite cañons, forming the highest expressions of the intensity of glacial force I have observed.

The same tendency toward maintaining evenness of surface obtains to some extent in vertical erosion also; as when hard masses rise abruptly from a comparatively level area exposed to the full sweep of the overpassing current. If vertical cleavage be developed in such rocks, *moutonnée* forms will be produced with a split face turned away from the direction of the flow, as shown in Figure 8, Study No. 1. These forms, measuring from a few inches to a thousand feet or more in height, abound in hard granitic regions. If no cleavage be developed, then long ovals will be formed, with their greater diameters extended in the direction of the current. The general tendency, however, in vertical erosion is to make the valleys deeper and ridges relatively higher, the ice-currents being constantly attracted to the valleys, causing erosion to go on at an accelerated rate, and drawn away from the resisting ridges until they emerge



from the ice-sheet and cease to be eroded; the law here applicable being, "to him that hath shall be given."

Thus it appears that, no matter how the preglacial mass of the range came into existence, all the separate mountains distributed over its surface between latitude  $36^{\circ} 30'$  and  $39^{\circ}$ , whether the lofty alps of the summit, or richly sculptured dome-clusters of the flank, or the burnished bosses and mountainets projecting from the sides of the valleys—all owe their development to the ice-sheet of the great winter and the separate glaciers into which it afterward separated. In all this sublime fulfillment there was no upbuilding, but a universal razing and dismantling, and of this every mountain and valley is the record and monument.

#### TRAVEL

*To travel is to do, not only to see. To travel best is to be of the sportsmen of the road. To take a chance and win; to feel the glow of muscles too long unused; to sleep on the ground at night and find it soft; to eat, not because it is time to eat, but because one's body is clamoring for food; to drink where every stream and river is pure and cold; to get close to the earth and see the stars—this is travel.*

MARY ROBERTS RINEHART

# SIERRA CLUB

Founded 1891

402 MILLS BUILDING, SAN FRANCISCO, CALIFORNIA

Annual Dues: \$3.00 (first year, \$5.00)

## THE PURPOSES OF THE CLUB ARE:

*To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada.*

JOHN MUIR, President 1892 to 1914

## OFFICERS AND COMMITTEES FOR THE YEAR 1920-1921

### BOARD OF DIRECTORS

WILLIAM FREDERIC BADÉ, Berkeley	President
CLAIR S. TAPPAAN, Los Angeles	Vice-President
WM. E. COLBY, San Francisco	Secretary
J. N. LE CONTE, Berkeley	Treasurer
MARION RANDALL PARSONS, Berkeley	ROBERT M. PRICE, Reno, Nevada
PHIL S. BERNAYS, Los Angeles	
PAYSON J. TREAT, Stanford University	WALTER L. HUBER, San Francisco

### HONORARY VICE-PRESIDENTS

JAMES BRYCE, London, England	WILLIAM B. GREELEY, Washington
ROBERT UNDERWOOD JOHNSON, New York City	
DAVID STARR JORDAN, Stanford University	
J. HORACE MCFARLAND, Harrisburg, Pennsylvania	
STEPHEN T. MATHER, Washington, D.C.	
VERNON S. KELLOGG, Stanford University	

### COMMITTEES

*Outing Committee:* WILLIAM E. COLBY (*Chairman and Manager*), CLAIR S. TAPPAAN (*Assistant Manager*), JOSEPH N. LE CONTE.  
*Committee on Local Walks:* DOZIER FINLEY (*Chairman*), WILLIAM T. GOLDSBOROUGH, S. M. HASLETT, FLORENCE E. ATKINSON, HELENE HOFF.  
*Committee on Le Conte and Parsons Memorial Lodges:* JOSEPH N. LE CONTE (*Chairman*), MARION RANDALL PARSONS, ROBERT M. PRICE.  
*Auditing Committee:* PAYSON J. TREAT (*Chairman*), WALTER L. HUBER, ROBERT M. PRICE.  
*Assistant Secretary:* NELL L. TAGGARD.  
*Librarian:* WALLACE BRADFORD.  
*Southern California Section Executive Committee:* CHARLES J. FOX (*Chairman*), Los Angeles; MRS. MABELLE MCCALLA STOCKING (*Secretary*), Los Angeles; BENJAMIN W. FENTON (*Treasurer*), Pasadena; GEORGE W. McDILL, ERNEST DAWSON, CHESTER VERSTEEG, MISS CARIE TRACY, MISS ALICE BATES, Los Angeles; MISS AURELIA HARWOOD, Upland.

## SIERRA CLUB BULLETIN

*Published annually for the members*

### EDITORIAL BOARD

WILLIAM F. BADÉ	Editor
MARION RANDALL PARSONS	Associate Editor and Book Reviews
WILLIAM E. COLBY	Notes and Correspondence
WALTER MULFORD	Forestry Notes

ALBERT H. ALLEN, FRANCIS P. FARQUHAR, J. N. LE CONTE,  
WALTER L. HUBER, WILLIAM T. GOLDSBOROUGH, ELLIOTT MCALLISTER,  
ELIZABETH M. BADÉ, PHIL S. BERNAYS, C. NELSON HACKETT

## EDITORIALS

**HANDS OFF THE PARKS!** During the past months we have faced the most critical situation that has ever arisen in the history of our national parks.

First special interests made a determined attempt, with the so-called Smith Bill, to invade the Yellowstone National Park and submerge eight thousand acres in the beautiful Falls River basin. By clever handling, the bill was railroaded through the Senate and was on the unanimous consent calendar of the House before the friends of the parks got wind of the situation and checked its career by a hearing before the House Rules Committee. It is in good part due to the vigorous and instant response of a large proportion of our members who sent their protests to Congress that this bill may now be regarded as dead.

An even more dangerous project to dam Yellowstone Lake for the benefit of local irrigation and power interests in Montana is still before Congress in a new bill introduced by Senator Walsh of Montana. At a public hearing afforded its promoters last summer by Secretary Payne it was freely admitted that their reason for desiring to place the dam in the park instead of outside, where a much greater volume of water could be impounded, is to save themselves the expense of buying a dam-site. It was apparently something of a shock for them to be asked by Secretary Payne whether they had ever thought of the fact that national parks had been established for all the people of the United States, and for posterity, and not for the exclusive benefit of residents in the Yellowstone Valley. It is a disheartening and disquieting fact that selfish groups who wish to invade the parks for private ends can always find politicians ready to assist them. The only thing that makes an impression upon such persons is a united and aggressive public sentiment demanding that the parks be preserved exactly as nature made them, and that no commercial interest be permitted to enter them for any purpose whatsoever. This demand was made unequivocally and unanimously at the recent National Conference on Parks held at Des Moines.

Interested parties are endeavoring to propagate the false impression that most commercial opportunities for water power are now locked up in the parks, and that it is necessary to open them up for exploitation. The truth is that our parks constitute only *four per cent* of the national forests, and less than two per cent of the remaining public lands, and that more than ninety per cent of the water-power opportunities in these public land areas *remain undeveloped*. It is not need, but greed, that turns the eyes of park invaders, municipal as well as others, toward the waters of our mountain sanctuaries, for there they hope to get free from a complaisant government what elsewhere they would have honestly to pay for. In any case, the water does not remain in the parks, but can be utilized after it comes out. According to one of the greatest irrigation experts in the country, the storage opportunities outside are so great and

so undeveloped that they are not likely to be exhausted in any future that can now be foreseen.

W. F. B.

**CONFERENCE ON NATIONAL PARKS** The National Conference on Parks, held at Des Moines in January, was remarkable for its size, its enthusiasm, and its progressiveness. The difference in purpose between our national parks and our national forests was brought out at various points in the conference, and there was a very evident determination to present a united front against recent tendencies to throw our national parks open to commercialization. The various movements to establish state parks came in for a good deal of attention and encouragement. It was a fitting recognition of the firm and patriotic stand taken by Secretary John Barton Payne in favor of park protection that he was made chairman of a national committee charged with the task of arranging for another conference next year.

W. F. B.

**GIFTS AND REQUESTS TO THE CLUB** A public-spirited member of the club recently came to the conclusion that if she gave certain money to the club during her lifetime, instead of bequeathing it to the club in her will, as she had originally intended, she would be doing a great deal more good with this amount of money, and it would immediately begin to accomplish the results which she desired. We trust that our members will give serious thought to this plan. There are many praiseworthy objects which can be accomplished or furthered by the judicious use of funds, even though small in amount, but which work the club now has to forego because of financial limitations. Material wealth accumulated during our lifetime ceases to have any value for us after death. While it is eminently desirable that we should all provide for those who are dependent upon us, and who need such provision, yet there is a proper limit to this form of disposition, and there is nothing more praiseworthy than to devote some portion of one's accumulated wealth to objects which will perpetually promote public welfare.

There are few things more vital to the national welfare than to preserve inviolate for all time some of our wonder-spots in their primeval condition as examples of "pure wildness," to use a favorite expression of John Muir's, for the enjoyment and uplift of the generations to come.

This important work can be furthered by financial aid.

W. E. C.



TEHIPITE DOME AND MIDDLE FORK OF KINGS RIVER  
Photo by Francis P. Farquhar



LOOKING UP PALEADE CREEK FROM RAMBAUD CREEK.  
Middle ground at the left  
Madeira at the right  
Photo by E. W. Henderson

## REPORTS OF COMMITTEES

### TREASURER'S REPORT

*To the Directors of the Sierra Club:*

The following report on the finances of the club for the year ended December 31, 1920, is respectfully submitted.

JOSEPH N. LE CONTE, Treasurer

#### *Received:*

#### GENERAL FUND

Dues from 663 new members, at \$5 each . . . . .	\$ 3,315.00
Dues from 1445 old members, at \$3 each . . . . .	4,335.00

Total dues received . . . . .	\$ 7,650.00
Advertising in SIERRA CLUB BULLETIN . . . . .	535.00
Copies of BULLETIN sold . . . . .	49.40
Pins and song-books sold . . . . .	44.85
Maps, etc., sold at Le Conte Lodge . . . . .	17.27
Sublease of office-room in Mills Building . . . . .	76.00
Interest on savings-bank accounts . . . . .	99.64
Income accrued on War Savings Stamps . . . . .	24.00
Miscellaneous small receipts . . . . .	17.55

Total received . . . . . \$ 8,513.71

#### *Expended:*

Office rent, Mills Building . . . . .	\$ 850.00
Salary of Assistant Secretary . . . . .	1,030.00
Total cost of 1920 BULLETIN, printing and cuts . . . . .	2,136.50
Distribution of BULLETIN, postage and mailing . . . . .	172.52
Cost of securing advertisements for BULLETIN . . . . .	140.00
General office expenses, postage and stationery . . . . .	552.14
Telephone and telegrams . . . . .	170.71
Proportion of dues turned over to Southern California Section . . . . .	571.50
Le Conte Lodge and Yosemite Auditorium . . . . .	380.96
Expenses for Save the Parks movement . . . . .	225.00
Redemption of certificate, Soda Springs property . . . . .	200.00
Additions to library and binding . . . . .	120.90
Traveling expenses of Southern California directors to meetings . . . . .	82.50
Local walks, printing and postage . . . . .	96.63
Taxes on Soda Springs property . . . . .	60.04
Meetings and entertainments . . . . .	21.33
Dues to other clubs . . . . .	46.90
Purchase of club pins for resale . . . . .	52.04
Miscellaneous small expenses . . . . .	35.25

Total expended . . . . . \$ 6,944.92



*Summary:*

Total received . . . . .	\$ 8,513.71
Balance January 1, 1920 . . . . .	2,757.79
Total . . . . .	\$11,271.50
Total expended . . . . .	6,944.92
Balance December 31, 1920 . . . . .	\$ 4,326.58

*On hand:*

First National Bank, cash . . . . .	\$ 517.42
Mercantile Trust Company, Savings Union Branch, cash . . . . .	756.05
Security Savings Bank, cash . . . . .	2,144.11
War Savings Stamps . . . . .	884.00
Cash in office . . . . .	25.00
Total . . . . .	\$ 4,326.58

*Received:*

## PERMANENT FUND

Four new life memberships, at \$50 each . . . . .	\$ 200.00
Interest on savings-bank account . . . . .	12.78
Interest on Liberty Bonds . . . . .	85.00

Total received . . . . .	\$ 297.78
Balance January 1, 1920 . . . . .	2,255.12
Balance December 31, 1920 . . . . .	\$ 2,552.90

*On hand:*

Liberty Bonds: Third 4¼%, par value . . . . .	\$ 1,000.00
Liberty Bonds: Fourth 4¼%, par value . . . . .	1,000.00
Security Savings Bank, cash . . . . .	467.90
First National Bank, cash . . . . .	85.00

Total . . . . . \$ 2,552.90

*On hand:*

## ROBERT S. GILLETTE FUND

Victory Bonds: Fifth 4¾%, par value . . . . .	\$ 1,000.00
---	-------------

*Received:*

## SPECIAL MEMORIAL LODGE FUND

Donation of securities at par value of . . . . .	\$ 2,000.00
--	-------------

*On hand:*

Securities at par value of . . . . .	\$ 2,000.00
--------------------------------------	-------------

*Received:*

## MEMORIAL LODGE CURRENT FUND

Donations . . . . .	\$ 15.00
Interest on Gillette and Special Memorial Lodge Funds . . . . .	93.75

Total received . . . . . \$ 108.75

*On hand:*

Wells Fargo Nevada National Bank, cash . . . . .	\$ 108.75
--	-----------

SECRETARY'S REPORT

*To the Members of the Sierra Club:*

The past year has been one of the most active in the club's existence. The club has had a greater opportunity for genuine service than for many years past. The inclusion of national parks in the Federal Water Power Bill rendered it necessary to start an energetic campaign to have them excluded without delay from the destructive commercialization to which they were thrown open. Already many filings have been made under this recent legislation, certain of them in the immediate vicinity of the Yosemite Valley, which would seriously affect some of the most beautiful falls of the park. These are only a prophecy of what will come if the parks are left unprotected from similar assaults. The bill pending in Congress providing for the damming of the Yellowstone Lake represents an attempted invasion of the Yellowstone National Park. It is quite evident that a concerted attempt is being made to break down the safeguards which have heretofore surrounded our national parks, and it is vitally important for all of our members to work more earnestly than ever to stop these threatened invasions before it is too late. The creation of the Greater Sequoia (or Roosevelt) National Park is also important legislation which the club is fostering and which is now pending before Congress.

During the year a member, who does not wish his name disclosed, has presented the club with bonds representing \$2000, accompanied by the suggestion that the income be used for the care of the Parsons and Le Conte lodges. This is an admirable way of helping in the work of the club and placing it on a firmer foundation.

Owing to the very active campaign for new members conducted during the year, the membership now numbers 2257. There were 663 members added during the year and 314 lost through death and resignations. This increase in membership is most encouraging as an indication that the club is approaching more normal times and has safely bridged the unsettled period resulting from the war. From every side, both from editorial comment in newspapers and from private expressions of opinion, it becomes increasingly evident that the Sierra Club is held in high esteem because of its unselfish and fearless stand on all questions which come within its sphere of activity.

WILLIAM E. COLBY, Secretary

REPORT OF 1920 OUTING

The outing held by the Sierra Club during July, 1920, was the most ambitious and, at the same time, the most successful the club has ever undertaken. This particular trip had been planned to take place in 1917, but the entry of the United States into the war prevented. The club started from Huntington Lake, crossing the lake on barges and camping at the upper end for two or three days. The party next visited the Lower Hot Springs on the South Fork of the San Joaquin, moving up the river to the very attractive Paradise (Jackass) Meadows, where another short stay was made. Moving still farther up the river, the club camped for one night near the junction of Evolution Creek. The

following day camp was made in the upper end of Evolution Valley just below The Hermit and Evolution Basin. From this wonderful spot side-trips were taken into the great array of near-by peaks. Two parties made the first ascent of Mount Fiske. It was quite an undertaking to transport the immense tonnage of provisions and equipment across Muir Pass (12,059 ft.), and, in spite of the light snowfall which prevailed through most of the Sierra, there was still several miles of snow to cross in the vicinity of the pass. The pack-train took over an advance load of provisions, which was cached on the farther side of the pass amid a snow- and hail-storm accompanied by thunder and lightning. The entire party made the trip across without great difficulty and camped that night in Little Pete Meadow with the majestic uplift of Langille Peak towering on the opposite side of the river. Moving on down the Middle Fork of the Kings River, the most permanent camp of the trip was made immediately at the junction of Palisade Creek with the main river. During the several days' stay at this point side-trips were again taken into the surrounding mountains, this camp being in all probability the most strategic for real mountaineering in the entire Sierra. Climbs were made of the North Palisade and other peaks in the vicinity. Continuing on down the Middle Fork, a one-night's stop was made at Simpson Meadows, and then two days were spent in Tehipite Valley. Tehipite Dome stood out in the moonlight of these nights like a monument of alabaster, its beauty seeming almost ethereal.

On the return to Huntington Lake stops were made at Gnat, Maxon, and Helms meadows. In ruggedness of country traversed, in difficulty of transportation, and in grandeur of scenery, the 1920 outing will long remain as a record trip.

Many unforeseen difficulties arose, due to the snow conditions in the passes of the Sierra, which made the pack-train several days late in arriving at the point of departure, and a strike on the part of some of the packers also added to the difficulty of the management. The party responded so generously to the various emergencies and helped in so many ways that it would be impossible to enumerate all those to whom the management owes the deepest obligation.

The cold and treacherous waters of one of the rivers came near resulting in a fatality, but the cool and courageous rescue accomplished by some of the women is indicative of the experience and resourcefulness of the members who have taken many of these high-mountain trips. The emergency created by the pack-train difficulties, as well as the sudden advance in the cost of certain provisions after the outing estimate had been made, resulted in the necessity of calling for a small additional assessment, the first one in sixteen years. The committee regretted that it was necessary, and it would seem as though, with the experience of the past on other outings, it can be avoided in the future.

The outing for 1921 will be taken from Soda Springs in Tuolumne Meadows as a base, which will be reached via Yosemite Valley. The main feature of the trip will be an excursion into the northern portion of the Yosemite National Park, which has not been visited by the club for a number of years, and the attractive features of which are worth visiting again and again. New country which the club has not heretofore reached on its outings will also be included in the itinerary.

The attempt will also be made, for those who desire to do so, to study the birds, animals, trees, flowers, and geological features under competent supervision. Those who are interested in taking this trip, which will be made during July, 1921, should signify their intention in writing at as early a date as possible in order to help the committee in making the necessary arrangements.

OUTING COMMITTEE, Per WM. E. COLBY, Chairman

# LE CONTE AND PARSONS MEMORIAL LODGES

The Le Conte Lodge opened to the public on May 15, 1921, and closed on August 20th. Tourist travel to the Yosemite this season was greater than during any previous year, and the number of visitors to the Lodge was correspondingly large—nearly five thousand names appeared on the register for the year.

The library, herbarium, and photographs were in constant use by the visitors, and all commended the work and spirit of the Sierra Club. Several new books were added to the library—e. g., "California Wild-Flower Songs" and "The Children's Lark," both presented by the author, Leila France McDermott; Dr. Badè presented his interesting article, "John Muir in the Yosemite"; and an album of views of the Half Dome cable stairway was given by Mr. M. H. McAllister. The library always welcomes any donation of books, maps, or photographs, relating to science, travel, natural history, etc., that would be of interest.

The real necessities for the building constitute the following: Two doors for the side rooms; new lock and repairs on front door; repairs on roof, and closing of numerous cracks and openings under eaves; complete stoppage of all cracks and holes in woodwork in interior which admit wood-rats; improved lighting and wiring. The planting of trees and shrubs around the building would greatly improve its general appearance.

A new fire-hose was purchased by the club, and is quite satisfactory, the normal water-pressure being sufficient to cast a stream over the apex of the roof. The fire menace is therefore lessened considerably.

The cable stairway up Half Dome, donated to the park by Mr. McAllister, proved very satisfactory, and enabled thousands to reach the summit of the Dome, which heretofore had been a very hazardous undertaking. Early in the season snow avalanches carried away nearly one hundred feet of the iron supports, yet the cable itself remained intact, resting on the surface of the Dome, and many made the ascent while this condition prevailed. Later the Park Service repaired the stairway, and it is now in first-class order. From experience, it is advisable to remove the supports at the opening of the winter season, for snow avalanches are inevitable, and injury to the cable is almost a foregone conclusion. A new flag was hoisted on the overhanging rock of the Dome, and it will be necessary to renew it every spring.

Several hundred pounds of rock salt was sent by Mr. M. Hall McAllister, to be used for deer-licks, 150 pounds being placed in a meadow in the Little Yosemite, and during the coming season I shall try to set out the remainder in various spots around the valley.

An outdoor log auditorium about four hundred feet east of the Le Conte Lodge was constructed jointly by the Sierra Club and the National Park Service. It is equipped with water hydrant, electric light, and canvas seat-backs, which may be stored during the winter.

A series of six lectures was held in Yosemite this year. Those requiring lantern-slides were held in the Government pavilion at the Yosemite Village; the others in the new Le Conte Lodge auditorium. They were very satisfactory and well attended.

#### PARSONS MEMORIAL LODGE

This year there was no custodian at Parsons Memorial Lodge in Tuolumne Meadows, and accordingly the building and log cabin adjacent were broken into and many articles belonging to the club were stolen. Both buildings were misused by travelers through the Meadows and left by them in a very disorderly condition. Upon several visits to the Meadows I closed the lodge as securely as possible, but on following trips I found the door and windows had been forced open and the interior in general confusion. The poles intended to support the roof against winter snows had been removed and cut up. It was necessary therefore to set up new supports as protection during the coming winter, and Mr. F. C. Holman (who has done much for the Sierra Club this season, as in the past) and I cut poles of the proper size from large logs lying in the lodge and set them up, securely wedging them. A custodian for Parsons Lodge is a necessity, and if the club does not install one in future seasons, the same conditions will prevail, as the traveling public apparently have no regard for public property.

The Soda Springs at Tuolumne Meadows were frequented by great numbers of tourists during the season. I would suggest that some improvements be made at the springs, as the present method of baling the water out from the springs is very unsanitary.

Respectfully submitted,

ANSELL E. ADAMS,  
Custodian Le Conte Lodge

## NOTES AND CORRESPONDENCE



### CLIMBING MOUNT HUMPHREYS FROM BISHOP

By C. H. RHODY

For a little over twelve years I lived in the Owens Valley, practically at the base of Mount Humphreys, before an opportunity presented itself of carrying out a long-cherished desire to look at the world from the top of the noble old mountain. My ambition was realized on July 18, 1920, when with two fellow engineers, LeRoy C. Bogue and Joseph L. Findlay, we added our names to the Sierra Club register found on top of the mountain, making a total of nine signatures up to that date.\*

We were fortunate in being able to make the start for the summit from a construction camp, at that time being operated by the writer for the Southern Sierras Power Company, located only three miles horizontally and a little over one mile vertically from the top of the mountain. In this connection, I might add that the camp-site was reached by a Ford car, specially equipped, and, so far as my information goes, no other car has been this close to the summit of Mount Humphreys.

We were on our way at 6:00 A.M. We followed the trail to its end at the McGee Creek Reservoir, being the higher of the two small lakes shown on the Mount Goddard topographic sheet on the headwaters of McGee Creek.

We went around the northwest side of this lake about halfway and then turned almost due west up the mountain-side, skirting to the south and west of a prominent ridge projecting from the main range; we finally reached the crest of this ridge, which we traversed till we came out on top of the saddle on a wide flat about one mile northwesterly from Humphreys. Our course then zig-zagged along the main crest, now on the east side, then on the west side, around the bases of the jagged sawteeth, any of which would have been fine sport in climbing if we hadn't been in search of bigger game.

After perhaps an hour of winding back and forth between the pinnacles, and this time scaling along the east side of one of them, we came suddenly face to face with the real thing. There it was, a towering spire five or six hundred feet high. The northwest side of the main peak proper is indented, or trough-shaped, for the first three hundred feet, and gradually becomes steeper and narrower till it pinches out entirely, and ends up against an almost vertical wall. Viewing the thing from a distance of probably eight hundred feet, it simply looked impossible to climb it; but remembering that others had claimed to have reached the top, we knew that if they had we could do it too; so we started up the trough. The going was good for the first three hundred feet, and then the crevasse played out, and it seemed for a time that we had reached the "end of the trail." After looking around for quite a little while, we discovered a slight ledge to our right which seemed to hold out possibilities. This is

\* See Editor's Note at end of article.

no doubt the same ledge that Mr. Bunn mentions, for I do not believe there is another possible chance to climb the peak from the northwest side except to use this ledge. Very carefully we worked our way along for a distance of some twenty or thirty feet, and it brought us out right on the ridge of the spire. The ridge was broken and jagged, and furnished in most places good handholds. However, there was one place in particular where the traction furnished by hands and feet seemed inadequate, and in that case the stomach was brought into play also. Anyone who has been in these ticklish places knows what I mean, and, I dare say, in similar circumstances has used the same method.

The last two hundred and fifty feet of the climb is truly a scaly proposition, the route of ascent here being along the comb of a ridge. About fifty feet from the top the comb flattens out, and here a huge boulder is carefully balanced along the crest. At first the climber thinks he can work his way around this boulder, but after he has spent some time in trying to do so, and has incidentally observed the delicately balanced position of the rock, he finds that the only course open leads directly over the top of this stone and he fully expects it to turn over when he steps on top of it.

After passing this place, where the hair tends to assume a vertical position, the top is reached in two minutes. We found the Sierra Club register in plain view on a flat rock. Our names were added to the list of six already recorded, and about one hour was spent on the top.

The flat space on the top is not more than ten feet square. The stone is badly broken, and indeed the summit resembles a huge rock-pile flattened out at the apex. It is dangerous to get closer than within three feet of the edge anywhere on the top on account of the looseness of the boulders.

We found upon our arrival at the summit a lady-bug perched on the highest point of the highest rock, taking life easy at 13,972 feet above sea-level.

We were six hours making the climb from the McGee Creek camp, and the return was made in about three hours, and in two more hours we were in Bishop.

EDITOR'S NOTE.—Former ascents of Mount Humphreys as far as known are: James S. Hutchinson and E. C. Hutchinson, July, 1904 (see *SIERRA CLUB BULLETIN*, Jan., 1905, vol. V, No. 3, p. 153); Dan Samardich, a prospector, 1917; George R. Bunn and two companions, August, 1919 (see *SIERRA CLUB BULLETIN*, Jan., 1920, vol. XI, No. 1, p. 56.)

#### MOUNTAIN-CLIMBING NOTES

BY FRANCIS P. FARQUHAR

##### I. NORTH PALISADE (14,254 FEET)

The North Palisade is the third highest peak in California, exceeded only by Mount Whitney and Mount Williamson. It has always been considered one of the most difficult peaks to climb in the Sierra. A brief summary of its history and of the route of its ascent is given here for the benefit of future travelers.

The first ascent was made July 25, 1903, by Joseph N. Le Conte, James S. Hutchinson, and James K. Moffitt. It was not climbed again until ten years later, when two parties from the Sierra Club outing of 1913 reached the top. Hilda M. Atkinson and Charles W. Michael made the climb on July 19th, and





MOUNT HUMPHREYS FROM THE NORTH  
Photo by C. H. Rhoads



THE NORTH PALISADE (14,254 FEET)  
Dotted line shows route of ascent

on the 21st Professor Joseph N. Le Conte led a party of twelve safely over the difficult route. The members were: Robert M. Price, W. Leon Dawson, J. Floyd Place, John S. Burd, F. G. Chamberlain, Frank M. Bumstead, Mary E. Haskell, T. V. Bichowsky, Raymond Bontz, Harry M. Snell, George Merritt, and Robert L. Lipman. The following year, on August 1, 1914, O. Sargent Norton and W. Sherwood Norton registered at the summit. The next ascent was on August 1, 1919, by James E. Rother and W. S. Solari. Last summer four members of the Sierra Club outing—Robert M. Price, Walter L. Huber, Norman Clyde, and Francis P. Farquhar—reached the summit on July 1, 1920.

An account of the first ascent with a description of the route was published by Professor Le Conte in the *SIERRA CLUB BULLETIN* for January, 1904 (volume V, number 1); but as this is now out of print, an outline of the route has been traced on the accompanying photograph of the mountain, taken by George D. Whittle from Palisade Basin last summer. The base is best reached from Palisade Creek, where camp can be made at Deer Meadow. A stream descending from Palisade Basin enters the creek at this point, and up this stream lies the best approach. Keeping to the northwest, head directly for the mountain. As it comes in view, select the largest cleft in its face and ascend the talus-pile that leads to it. Once fairly in this largest cleft, the way can hardly be mistaken, as only one possible route to the summit has yet been discovered. As the way becomes steeper and the talus is left behind, look for a ledge on the face of the wall to the left (north). Cairns of rock have been built along it by former parties. It can be reached from the upper (right-hand) end. This is the first place on the climb that requires particular caution. From the lower end of the ledge look back, and directly above will be seen a narrow cleft parallel to the larger one that you have just left. From here on it is a stiff climb to the top of the cleft, and even within a few feet of the summit there are some difficult spots. The difficulty will vary with the quantity and hardness of the snow that chokes one section of the narrow cleft. About twelve or thirteen hours should be allowed for the round trip from Deer Meadow. The descent from Palisade Basin may be made by way of Glacier Creek.

The Palisades received their name in 1864 during the explorations of the State Geological Survey under James Dwight Whitney. They were reported as being at the head of the North Fork of Kings River, as it was not then known that the Middle Fork intervened and that the North Fork did not reach the crest of the Sierra. They were supposed to be of volcanic origin, but have since been discovered to be of granite. The great glacier at the eastern foot of the North Palisade was not known until a few years ago. The North Palisade has been locally and temporarily known as Dusy Peak and as Mount Jordan.

## II. SEVEN GABLES (13,066 FEET)

Seven Gables is a picturesque mountain dominating the headwaters of Bear Creek, one of the tributaries to the South Fork of San Joaquin River. Theodore S. Solomons, who made the first ascent and gave the name to the mountain, describes the superb view in the *SIERRA CLUB BULLETIN* for May, 1895 (volume I, number 6, page 230). Solomons was in doubt about the identity of the neighboring peaks, as the region was then unmapped. The panorama, as

identified from the U. S. Geological Survey maps, includes the Merced, Lyell, and Ritter groups to the northwest; Red Slate Peak, Red-and-White Peak, Hilgard, Abbott, to the north; Bear Creek Spine, Mount Tom, Humphreys, to the east; North Palisade, Darwin, Goddard, to the southeast and south. Many others lie in between. With a field-glass Mount Whitney can be clearly distinguished just to the left of a sharp peak on the Goddard Divide. Mount Brewer and the Milestone can also be seen with a glass to the left and right, respectively, of Mount Goddard. The Kaweah Peaks, a little farther to the west, are very distinct. Innumerable lakes and snowy cirques are near at hand on every side.

The upper Bear Creek region is ordinarily reached either from Vermilion Valley over the Bear Ridge trail or from Blaney Meadows over Seldon Pass. It is also possible to follow up the cañon of Bear Creek from its lower end, avoiding the long ascent of Bear Ridge; but this is not recommended until a better trail has been built. By more or less difficult foot routes, without trail, the region can be reached from French Cañon on the south, from the Receases of Mono Creek on the north, or from the eastern side of the Sierra.

The ascent of the peak is made from the South Fork of Bear Creek, on the southwest side of the mountain. The way can easily be found and the round trip can be made without difficulty in half a day from the highest suitable camping-place on the South Fork.

The first ascent was made on September 20, 1894, by Theodore S. Solomons and Leigh Bierce. The only ascents recorded in the Sierra Club register, placed on the summit in 1898, are: June 30, 1898, C. L. Cory, J. N. Le Conte; July 19, 1911, J. S. Hutchinson, J. N. Le Conte; June 19, 1917, H. H. Bliss, A. L. Jordan; July 10, 1920, Florence E. Atkinson, Robert M. Price, Francis P. Farquhar, A. H. Rzeppa, George D. Whittle, F. Bourn Hayne.

Professor Le Conte has given a brief account of his ascent of 1898 in the *SIERRA CLUB BULLETIN* for January, 1899 (volume II, number 5, page 253). Mr. Jordan describes his ascent with Mr. Bliss in 1917 in the *SIERRA CLUB BULLETIN* for January, 1918 (volume X, number 3, pages 292 to 293). Seven Gables deserves to be visited more frequently.

#### GOLDEN EAGLES IN THE SIERRA

Having had an interesting experience in the Tehipite Valley last summer, and finding, upon talking the matter over with those who are familiar with the Sierra and the habits of eagles, that this was a unique experience, I am submitting a brief note for the *BULLETIN*.

In company with my oldest son, Henry, and Leonard Keeler, a son of Charles Keeler, I made the ascent of Tehipite Dome from the floor of Tehipite Valley toward the end of July, 1920. We had ascended the wall of Tehipite on the west side of Crown Creek, crossing the creek two or three miles above the falls, and had made our way through the bad tangle of brush up on the ridge which leads out to the dome. We were still in the forest, but far enough out so that we could look down into Tehipite Valley, the floor of which was over 3000 feet below. We were suddenly surprised by a tremendous roar,

which continued increasing in intensity. The boys thought it must be a rock avalanche, and though it sounded very much like the reverberation that comes from such avalanches, I placed the noise up in the air, and involuntarily glanced up expecting to see the branches of the trees whipping about and bending under the effects of a local hurricane or whirlwind, for this seemed, on the spur of the moment, the most plausible explanation of this great volume of sound. Instead I saw two golden eagles tearing through the air and descending at an angle of at least forty-five degrees, passing immediately over the tops of the trees above our heads and shooting down into the depths of Tehipite Valley. Their immense wings were bowed in close to their bodies, and as they went shooting down they gave one the impression of tremendous power and energy, very much like the proverbial falling thunderbolt. I do not know when I have witnessed anything which has given me a greater impression of tremendous power. Accompanied by the almost unbelievable roar produced by their sudden descent through the air, one can well understand how small helpless creatures like the fawn would be petrified by terror and become the easy prey of these powerful birds.

Dr. C. Hart Merriam, formerly chief of the U. S. Biological Survey and connected with the Smithsonian Institution, tells me that in his varied travels he has only once witnessed a similar occurrence. This was in the San Francisco Mountains of Arizona, when he and his companion, Mr. Bailey, heard a similar roaring sound, and, looking up, saw a golden eagle shooting down out of the air, aimed directly at them. Mr. Bailey involuntarily, in order to save himself from what seemed impending catastrophe, raised his gun and shot the bird, which fell dead at their feet. Upon mature reflection, the only explanation they could give was that they were standing in the vicinity of the only water-hole to be found on that portion of the mountain, and that this eagle was either descending in search of prey or to visit this water-hole.

I have, both in the Kern River and from Eagle Peak in Yosemite, seen an eagle close his wings and shoot down with incredible speed for 1000 feet or more, and then spreading his wings sail away in the distance, but in each case these birds were so far away that I did not hear the tremendous roar which necessarily accompanies this performance. Perhaps other readers of the BULLETIN may have similar experiences to recount.

WILLIAM E. COLBY

LETTER FROM THE SECRETARY OF THE INTERIOR

MY DEAR DR. BADÉ:

Washington, D. C., December 13, 1920

Thank you for yours of December 7th.

Under separate cover I am sending you a copy of my annual report.

Senator Walsh has introduced a bill, S. 4529, authorizing the construction of a dam within three miles of the outlet of Yellowstone Lake. The exact spot is not indicated. Senator Jones has introduced a bill, S. 4554, to repeal so much of the Water Power Act as opens the national parks. The Walsh Bill should be defeated; the Jones Bill should be passed.

Sincerely yours,

JOHN BARTON PAYNE

The following telegrams were read at the Annual Reunion Dinner of the Sierra Club in the ballroom of the Palace Hotel, December 10, 1920. Covers were laid for three hundred persons and it was the most notable occasion of the kind in the history of the club:

DR. WM. F. BADÈ, Berkeley, Cal.

It is a course of much regret to me that I cannot attend your annual dinner, but important National Park problems make my presence here necessary just at this time. However, kindly extend my heartiest greetings to my fellow Sierra Club members present and wish them for me a very enjoyable evening. In the critical fight now on for the preservation of the parks I feel confident that we can depend on the Sierra Club as in similar past conflicts as a strong ally to use every means to combat the efforts to desecrate our national playgrounds. Secretary Payne has said that the Parks shall be kept inviolate and free from commercialization. In this firm stand he will need your support.

STEPHEN T. MATHER

DR. WM. F. BADÈ, Berkeley, Cal.

Imperative duties keeping me from Sierra Club reunion dinner, I ask you to read this telegram of admiration and congratulations to the club. It is worth while for the United States to have such an organization exist, and its members deserve congratulations on its achievements, and on the opportunity to stand firm for those achievements in vigorous and determined opposition to the present ominous assault on the integrity of our national parks by irrigation and power interests who are unwilling that even one per cent of the public lands shall be held sacred for the recreational use of all the people. In preservation of great natural wonders the Sierra Club stands as the strongest western bulwark against this aggression.

J. HORACE MCFARLAND,

President American Civic Association

. . .

DEAR MR. COLBY:

I feel it my duty as well as privilege to pass on to members of the Sierra Club a bit of the pleasure that was given me last July by the Canadian Alpine Club.

Early in June our train found a way into what had for some hours seemed to us a great barrier of glistening white peaks, and, in company with my mother and father, I had my first view of the beautiful little town of Banff.

Snugly tucked away in my bag was your letter, which was my credential as a Sierra Club member.

I soon found my way to the beautiful home built by the Alpine Club on the slopes of Sulphur Mountain, enjoyed the wonderful view from the veranda, had the pleasure of being received by the secretary, Mr. Mitchell, and was assured that I would be a very welcome guest at the annual gathering of the club, which was to be held at the foot of Mount Assiniboine, the Canadian Matterhorn.

There were delays in opening camp, as mountaineers know is not unusual, and July was well spent when our little company of twenty, under the leadership of Colonel Foster, was away, going the first six miles by launch up the beautiful and historic Bow River.

Sierra  
s were  
of the

linner,  
y just  
Sierra  
In the  
at we  
ally to  
unda.  
from

HER  
rou to  
worth  
mem-  
ity to  
on to  
rriga-  
public  
reser-  
estern

ion

Club  
Club.  
emed  
a my  
ff.  
as a

n the  
anda,  
s 25-  
f the  
dian

sual,  
der-  
the

THE NEW AUDITORIUM AT LE COTTE LODGE, YOSEMITE  
Photo by Henson Studio



SIERRA CLUB BULLETIN, VOL. XI.

PLATE XVI.





SIERRA CLUB COMMISSARY, 1920  
Little Pete  
Middle Fork of Kings River  
Photo by Rodney L. Gibson

I was quite athrill when I learned that one of our party was Ernest Feuz, a real Swiss guide.

Our beautiful trail led us the third day into the camp we had been anticipating so long—a little white city of tents, the most busy of which we found to be the large dining tent, which seated one hundred and fifty climbers at a time.

And let me not forget to tell you of the tea tent. I care nothing for tea—in fact, quite dislike it at home—but I am now sure there is no one of us so averse to tea as to be able to enjoy the friendship of these charming people and not be lured by the sociability over the teacups.

What a wonderful camp-spot it was in that wide alpine meadow near Lake Magog with its ever-changing reflections of one of the most beautiful and majestic of all mountains, Mount Assiniboine! The boom of avalanches was our morning serenade.

Conversation around the camp-fire was on the work of the day, centering, I think, on Mount Magog, the official graduating climb up which new members must make their way in order to qualify as active members.

Mr. Patterson, the president, gave me the thought that, while the club is proud of their record of ascents, the fact that these ascents are being made with safety is a source of greater pride to them.

Mr. Mitchell gave me the message that a cordial welcome awaits any Sierra Club people who may come that way. I truly congratulate anyone who may be so favored as to meet with the Canadian Alpine Club.

Yours very truly,

GERTRUDE ENID PARKER

GEOLOGICAL SURVEY, DEPT. MINES  
SYDNEY, N. S. WALES  
AUSTRALIA

November, 5, 1917

Mr. W. E. COLBY,

402 Mills Building, San Francisco, Cal., U. S. A.

*Dear Mr. Colby:* It is with great pleasure that I received the January (1917) number of the Sierra Club Review. The reading is excellent; John Muir's note on glacial action is very fine indeed. In Muir you had a man in America long ago who explained the action of ice-rivers, and it was really quite unnecessary to have waited until Henry Gannett made his great rediscovery, or, rather, belated contribution to glacial studies. John Muir evidently was not understood in his generation, but he will surely come to his own now, and he will become one of the "Immortals," one who illustrated the force of the passages, "Blessed are the meek, for they shall inherit the earth," and "Blessed are the pure in heart, for they shall see God."

The only thing missing in John Muir's account of the sculpture of the Sierra which I note is the apparent failure to recognize the great preglacial action of streams in carving the deep cañons of the Merced, San Joaquin, etc.

Had I had access, however, to the treasure-house of knowledge afforded by the Sierra Club's reprint of Muir's notes, I would have written a much better note on "An Excursion to the Yosemite" in 1910, as I would have had a

much larger number of valuable facts to draw upon than I had as a result of my limited observations alone.

The illustrations of the volume, or, rather, part, are up to the usual excellent standard.

With kindest regards, I am,

Yours sincerely,

E. C. ANDREWS

#### MOUNT CLARK TRAIL

In June Mr. L. L. Stoppel and myself blazed a trail from Mount Clark to the Merced Pass Trail in the Illilouette Valley, a distance of about five miles. The trail branches from the Merced Pass Trail at a point but a few hundred feet from the first large stream-crossing encountered (Gray Creek) since leaving the Glacier Point Trail, indicated by a sign alongside the trail, "To Mt. Clark." The blazes terminate at a suitable campground about a mile below the mountain on the Clark fork of Gray Peak Creek. In ascending the mountain, follow up the cañon till almost under the peak, then turn to the right and work around the southern shoulder of the mountain, ascending it on its eastern face. It is quite a difficult and dangerous climb and should be undertaken only by those who understand mountaineering thoroughly. The reason the blazes did not continue beyond this campground was for the reason that the forest is rather open in this high altitude, and also that the mountain is very evident, looming nearly 3000 feet above the campground. The trail is blazed only one way—going to the mountain—so a thorough understanding of the country should be obtained to make the return an easy matter, although the nearness of the creeks of the Illilouette Valley should prevent anyone from going astray, as they all flow to the Yosemite. The end of the blazes is indicated by a large arrow cut in a tree.

Register tubes with scrolls were placed on the following peaks: Mount Clark, Red Peak, Gray Peak. Register scrolls were also placed in the tubes on Grizzly Peak and Mount Conness. A new tube should be put on the latter mountain. In the coming season I shall endeavor to put a tube and scroll on Mount Starr King.

ANSELL E. ADAMS

The Sierra Club learns with deep regret of the death of Mr. Charles P. Punchard, Jr., at Denver on November 12, 1920. Mr. Punchard had been since August 1, 1918, the landscape engineer of the National Park Service.

#### CLUB EXTENSION

While the purpose of the Sierra Club is not fraternal, nevertheless the threads of lasting friendships spun therein interweave all the club's activities and strengthen incalculably its whole fabric. For this reason the Membership Committee wishes to see extended to other parts of the state the reunions and informal gatherings that are so frequent and delightful among the members who live in and around San Francisco. To this end the membership has been grouped according to locality; representatives are being appointed in each dis-

strict, to whom lists of all members in that locality will be furnished. Any member of the club may thus find out who are the other members in his vicinity. It will be left to the various groups to make their own arrangements for any sort of meetings or entertainments they may wish to hold. The club has some excellent lantern-slides of the High Sierra which any representative may obtain from the San Francisco office. In some instances, also, lecturers can be supplied. Further information may be obtained by addressing the chairman of the Membership Committee, Sierra Club, Mills Building, San Francisco.

#### LOCAL CHAIRMEN OF MEMBERSHIP COMMITTEE

SAN FRANCISCO, Alameda, Berkeley, Crockett, Emeryville, Mare Island, Oakland, Piedmont, Richmond, San Rafael.  
Room 402, Mills Bldg., San Francisco.

SACRAMENTO, Arbuckle, Chico, Durham, Galt, Gridley, Hamilton City, Oroville, Sutter Creek, Vacaville.

C. M. GOETHE, Inverness Bldg., Sacramento.

STOCKTON, Byron, Lodi, Middle River, Turlock.

H. R. McNOBLE, Box 214, Stockton.

FRESNO, Clovis, Fowler, North Fork, Sanger, Selma.

A. L. BRAVERMAN, Box 1052, Fresno, California.

SONOMA, Napa, Petaluma, St. Helena, Santa Rosa.

MRS. CARRIE BURLINGAME, Sonoma, California.

PALO ALTO, Burlingame, Menlo Park, San Carlos, San Mateo, Stanford University.

P. J. TREAT, Stanford, California.

WATSONVILLE, Capitola, Carmel, Pacific Grove, Salinas, Santa Cruz, Seabright.

JOHN GARDNER, Watsonville, California.

SAN JOSE, Coyote, Gilroy, Los Altos, Los Gatos, Milpitas, Morgan Hill, Mt. Hamilton, Santa Clara, Saratoga.

MISS C. BELLE EATON, 530 North First St., San Jose.

REDDING, Dunsmuir, McCloud, Trinity.

LAURENCE J. KENNEDY, Redding, California.

#### YOSEMITE.

CHARLES W. MICHAEL, Yosemite, California.

SANTA BARBARA, Ventura, Oxnard, Montecito, Ojai, Nordhoff, Santa Paula, Santa Maria.

MISS EDNA L. WHITE, 24 West Arrellaga St., Santa Barbara.

RIVERSIDE, San Bernardino, Corona, Palm Springs.

EMERSON L. HOLT, Riverside.

SANTA ANA, Whittier, Fullerton, Downey, Tustin, Bell.

A. J. PERKINS, Santa Ana.

POMONA, Upland, Claremont, Cucamonga, Puente, Alta Loma.

MISS AURELIA S. HARWOOD, Upland, California.

(Others to be added.)

## NATIONAL PARK NOTES

### ANNUAL REPORT OF THE DIRECTOR OF THE NATIONAL PARK SERVICE

The annual report of the Director of the National Park Service for 1920 may be obtained upon request from the National Park Service, Department of the Interior, Washington, D. C.

It is well worth obtaining and reading with care, for it contains much that is of vital interest to every lover of the mountains. One cannot read this report without feeling thankful that we began to preserve these park areas in time. The statistics and facts show that they are being regarded as a valuable and necessary element in our national life by rapidly increasing numbers of people who find in these public parks unequalled opportunities for healthful recreation, education, and enjoyment.

It is a temptation to quote liberally from this report, but as the volume itself is so easy to obtain, only a few figures and passages concerning the parks that come within the ordinary range of Sierra Club members are touched upon in these notes. The following paragraphs are quoted or abridged from the report:

One outstanding feature of the year's achievements undoubtedly is the fact that, while trying economic conditions throughout the country, inflated valuations, increased prices of labor and materials have caused disturbances in every line of human activity and contributed to the general unrest of the masses, our people have turned to the national parks for health, happiness, and a saner view of life. Our final returns show that the volume of tourist travel to our national parks and monuments this year exceeded the million mark. The total for 1920 was 1,058,455, as compared with 811,516 for 1919 and 356,097 for 1916. In the last analysis, this travel is the deciding factor as to whether or not the parks are measuring up to the high standard that has been set for them and all that is being said about them as the great recreational and pleasure grounds of the American people. Our travel figures indicate that our people have enthusiastically and spontaneously accepted these national wonderlands as their own. They are taking a personal interest in them. They are using them.

But it is at this time, when the national parks are entering upon their period of greatest usefulness, that they are confronted with dangers that threaten their very existence. The most determined efforts are being made, and will continue to be made, by private irrigation and water-power interests to invade the sanctity of these great areas reserved from the national domain solely because of their matchless scenic exhibits. It is primarily toward the utilization of their wonderful lakes, rivers, and spectacular waterfalls that their efforts are directed, and we are squarely face to face with the fact that the whole national-park system is facing a grave crisis, where a single false step would be irremediable.

On June 10, 1920, the President signed an act to create a Federal power commission, to provide for the improvement of navigation, the development of water power, and other purposes. The title of the act is "The Federal Water-Power Act." In its early tentative form the bill was scrutinized by the National Park Service and the form as submitted considered to safeguard the national parks and monuments from commercial invasion for water-power or irrigation purposes. When the bill, as finally passed by Congress, was submitted for the President's signature it was found that it contained provisions opening up all the national parks and monuments for water-power development. The bill, however, was signed with the understanding that necessary amendatory legislation would be presented and passed at the next session of Congress excluding the national parks and monuments from within the scope of the act.

This bill creates a commission which is empowered to issue to citizens of the United States or to corporations licenses for the purpose of constructing, operating, and maintaining dams, water-conduits, reservoirs, power-houses, transmission-lines, or other power project works along and on navigable waters of the United States, or upon any part of the public lands and reservations of the United States. The act then defines "reservations" to include national parks, national monuments, Indian and forest reservations. These reservations, among other public lands, are subject to the commission composed of the Secretary of War, the Secretary of the Interior, and the Secretary of Agriculture. In other words, the national parks and monuments are taken out of the hands of Congress, which has always retained its immediate jurisdiction over the national parks, and are turned over to the hands of this commission for commercial development. As a result of this law, applications have been made to the commission for licenses for water-power rights in the Sequoia and Yosemite national parks and in the Grand Cañon National Park; in fact, there is not a lake or a waterfall in any one of our national parks that can not be levied on for water-power purposes.

The city of Los Angeles has made application to the State Water Commission for various permits for utilizing water in the Yosemite and Sequoia national parks. The following examples will indicate the extent to which such applications would affect these parks:

The city's application, No. 1867, contemplates a reservoir within the Yosemite National Park in Virginia Cañon, near its mouth; also a reservoir in Tuolumne Cañon, to flood Glen Aulin, together with a conduit which will bypass the water-wheels at California and LeConte falls, extending to a power-house at the mouth of Return Creek. Another intake is to be constructed immediately below this power-house and from it a conduit will lead to a power-house in Tuolumne Cañon, immediately below Harden Lake.

Their application, No. 1868, for a permit to utilize water for the generation of electrical power, contemplates a storage reservoir on Merced Lake in the Yosemite National Park, with a conduit leading from this reservoir to a power-house to be located in Little Yosemite Valley; also a diversion of Illilouette Creek and Buena Vista Creek, at their mouths, with a conduit leading from said diversion to the before-mentioned power-house in the Little Yo-

semite Valley; also a reservoir and diversion at an elevation of 4000 feet, just below Wawona, with a conduit leading from this point to a power-house on the South Fork of the Merced River, at an elevation of 3500 feet.

Every thinking American, East and West, strongly favors the long-neglected development of our national water resources, and any attempts to make it appear that the defenders of our national parks are opponents of irrigation and water-power development are bound to fail. This is not a sectional question, and it can not be made one. The fullest possible development of western water resources is a national policy of the utmost importance to the whole people. So, also, is the development to its modest logical limits of the national-park system. The fact that the national-park system will hold out from commercial use an extremely small proportion of the enormous undeveloped water resources of the country does not prove that the parks' defenders are opponents of national water development. On the contrary, it shows that they are the discriminating seers of a use for this small part of the national waters which is of far greater value to the nation at large than they could ever be to certain communities living on park borders.

The devotion of the mountaineering clubs to the high ideals of the National Park Service and their affection for the snow-capped mountain ranges of the parks have been repeatedly emphasized. By friendly suggestions and constant enthusiastic support in the solution of our problems, these ever-alert friends have, since the establishment of the national-park system, been ready to render aid in maintaining the integrity of the parks and the policies of the service. Even as they in the past helped to defeat determined sheep raids against some of the parks, they have fought against the indiscriminate invasion of the parks for commercial purposes during the past year. The Sierra Club, the Mountaineers, the Mazamas, the Boone and Crockett Club, and others determinedly opposed the opening up of the Yellowstone for irrigation and stood against the application of the Federal water-power act to our national parks and monuments as a whole.

The legislature of the State of California, by the act of April 15, 1919, ceded exclusive jurisdiction to the United States of the territory within the metes and bounds of the Yosemite, Sequoia, and General Grant national parks, and by act approved June 2, 1920, Congress accepted the cession by the State of California of exclusive jurisdiction of the lands embraced within the above-mentioned national parks. As required by section 7 of said act, the United States District Court for the Northern District of California has appointed a commissioner to reside in Yosemite National Park, who has jurisdiction to hear and act upon all complaints made of any violations of law, or of rules and regulations made by the Secretary of the Interior, for the government of Yosemite National Park, and for the protection of the animals, birds, fish, and objects of interest therein, and for other purposes authorized by the act. As required by section 8 of said act, the United States District Court for the Southern District of California has appointed a commissioner for the Sequoia and General Grant national parks, to reside in one of the said parks, who has similar jurisdiction over these parks.

Mr. C. A. Degnan is the United States commissioner for Yosemite National



Park, and Mr. Walter Fry, our former superintendent of Sequoia and General Grant parks, is now United States commissioner for these parks.

It is a pleasure to be able to record each year that Yosemite National Park has completed its greatest and most successful season. Every season since my official connection with the national parks was formed Yosemite has exceeded all previous records of travel and has steadily forged ahead in improvements.

Only recently, while in the Yosemite Valley, I surveyed all of the achievements of the past five and one-half years, especially of the five seasons of Superintendent Lewis' incumbency, and as I compared the park of to-day with that of 1915 I realized as never before what a tremendous change in conditions had been wrought. All of these accomplishments have been in the public interest, and all have redounded, as made, to the pleasure of the park's patrons. That the people themselves have appreciated what has been done there is indicated plainly by the fact that ever-increasing throngs go to the park each summer, even though approach roads are bad and many of the roads within the park are often in a state of disrepair on account of shortage of funds.

It is a source of deep regret to me that other demands upon the resources of the Yosemite National Park Company for more immediate expenditures in facilities for summer visitors continue to postpone the erection of the hotel, but there is no question about the building of the new hotel. The site finally selected for the hotel is that formerly occupied by Camp Lost Arrow, not far from the foot of Yosemite Falls. This is a secluded spot and is very beautiful. Camp Curry made several betterments in its plant. It erected a new transportation office, a post-office, telephone and telegraph station, and a storage building for automobiles. It enjoyed a most successful season and, like the other hotel and camp enterprises, gave good service at reasonable rates. Expansion in housing facilities must continue in Yosemite Park, because travel will grow heavier each year.

A highway from Mariposa to El Portal, which is so essential to the development of the winter use of the park, has been indefinitely delayed because of lack of funds to do the construction work. The plan covered in my last report, whereby five-dollar certificates, good for admission to the park when exchanged at the park gates for automobiles permits, were to be sold at par, the proceeds to be used to build and pave this road, failed to meet with the popular support that was expected. The funds raised under this plan have now been placed in trust, to be used in paving a part of the Mariposa-El Portal Road when it shall have been graded and made ready for permanent surfacing. It is to be regretted that this project has been temporarily postponed, not alone because it holds back the consummation of plans for the winter use of the park on a large scale, but also because the present approach roads to the park—the Big Oak Flat and Wawona roads—are usually in such a bad state of repair as to discourage travel in summer-time.

In 1919 over 18,000 people camped in the free public camps on the floor of the valley, and this year they increased to 25,000. Many of them spent the entire summer on their chosen pleasure-ground. On any given date of the season there was the population of a fair-sized city living in the public camps,

not to mention those who patronized the hotel, lodges, and permanent hotel camps. The problems of sanitation and water supply were of transcending importance, and caused no little anxiety. As far as the sewage difficulties are concerned, the end is in sight, as a new sewer system is under construction.

After reading what has already been said about the year's developments in Yosemite Park, the Sierra Club members and other readers interested in the out-of-the-way places of the park may feel that too much attention is being given to the care and entertainment of motorists and other visitors who use only the roads and the hotels, lodges, and permanent camps. This, however, is not the fact. We are moving forward as fast as possible with the construction of trails in and about the Tuolumne River Cañon, which has never been opened even to pedestrians, and which of course never will be accessible to motorists. It was impossible, however, to accomplish much this year on account of inability to procure the special type of labor needed to perform heavy trail-construction work. The trail from Harden Lake into Pate Valley will be finished next year, and if appropriations are made as requested the trail from Waterwheel Falls down the Tuolumne River to Pate Valley will be built. Also, a trail will be constructed via the north wall of the cañon up Piute Creek to connect with the Pleasant Valley and other trails belonging to the system in the extreme northern part of the park.

In the Yosemite National Park, as in all of the other parks, the policy which contemplates leaving large areas of high mountain country wholly undeveloped should be forever maintained. Under this policy I never consider opening up any of the territory north of the Tuolumne River Cañon, the cañon itself, or any part of the region below Mount Lyell.

Early in the present calendar year it appeared for a time that all of the general legislation affecting Sequoia National Park then pending in Congress would be enacted into law forthwith, and that when the preparation of this report would be undertaken the park would be enlarged and changed in name to Roosevelt-Sequoia National Park. The extension bills came up for consideration in February, and both Senate (S. 1391) and House (H. R. 5006) measures were favorably reported by the Public Lands Committees. In the case of the Senate bill the committee, on February 25, 1920, recommended passage without change in form or substance. However, when the legislation came up for consideration in its regular order, objection was interposed to its enactment.

On the House side hearings were held on February 24, 25, and 26, 1920, by the Public Lands Committee. The bill as introduced was indorsed by the following, who personally appeared before the committee: Mrs. Marion Randall Parsons, representing the Sierra Club; Mr. H. E. Patterson, secretary of the Fresno Chamber of Commerce, representing the chamber and other business organizations; Mr. Jesse B. Agnew, representing the Visalia Board of Trade; and also Mr. Carl Bachem, timber expert employed by the Interior Department; Mr. H. M. Albright, field assistant; and myself. Opposing the bill as drawn, and urging extensive reductions in the territory involved, were Col. H. S. Graves, Chief Forester, and his assistant, Mr. A. E. Sherman.

After due consideration of the data presented in the hearings, the committee concluded to report the bill with certain changes in the boundary line, which

were acceptable to this department but not favored by the Department of Agriculture. The committee report was filed on March 25, but the bill has not yet received the final consideration of the House.

Sentiment in California and in Congress is generally favorable to the Roosevelt National Park plan as covered by the pending legislation. The Forest Service, however, continues to contend that areas more valuable for grazing, lumbering, etc., than for park purposes are affected by the proposed enlargement of Sequoia Park, and for that reason seeks a revision of the suggested new boundaries. The eliminations of territory suggested by the opposing bureau include the Evolution Basin on the north, part of the rim of the great cañon of the Middle Fork of the Kings River (Tehipite Valley), the Horse Corral Meadow, and the J. O. Pass region, Hockett Meadow, Mineral King, and Franklin Pass sections of the present and proposed parks, and, finally, the Whitney Meadow territory, with its golden-trout streams. Negotiations looking toward an adjustment of the differences between the two sides are still in progress.

The proposed new road to the Giant Forest from the Middle Fork of the Kaweah River is our most essential improvement project for several reasons. First, the state has promised to expend \$300,000 paving the road to the Middle Fork gateway if our new road is built, and, second, the old road up the Marble Fork is in a bad state of disrepair and is no longer safe for two-way traffic. To begin work on this highway next spring, funds will be asked immediately, and I can not too strongly urge the necessity for favorable action on the estimate as submitted.

The Kings River Parks Company, many stockholders of which are interested financially in the Yosemite National Park, has taken over several business establishments in Sequoia and General Grant parks under a two-year permit from the Interior Department. Among its purchases were Camp Sierra in the Giant Forest, and pack- and saddle-horse service at that point, the hotel camp in General Grant Park, the trail transportation facilities there, and likewise the store. This company plans extensive developments as soon as the enlargement bill is finally acted upon by the Congress.

The Kings River Parks Company, under permit from the department, in June took over the camp and store properties in the park, having purchased them from the General Grant Park Hotel Company. The Kings River Company also acquired the saddle-horse business in the park. Automobile transportation from Fresno continued to be operated by the Kings River Stage & Transportation Company, while a new automobile stage line to the park from Visalia was established by W. M. Collins under a yearly permit from this service. The Kings River Parks Company contemplates several important improvements for its General Grant properties, in anticipation of still larger travel. We, too, expect constantly increasing travel, and to perform the obligations by the Government to these visitors our appropriations should at least be doubled next year. Not only should the roads and trails be kept in better condition, but campgrounds must be extended and improved, sanitation bettered, and the water supply augmented.

Among the national monuments is the Pinnacles National Monument, in

San Benito County, California, created by presidential proclamation on January 16, 1908. Its many spiral-like rock formations, from 600 to 1000 feet high, are visible for many miles and give the monument its name. No money was spent on the monument during the year. An unfortunate situation exists here. Recent purchasers of an alienated tract of land within the monument, which is traversed by the sole road, have fenced off access to the monument and are charging a toll for passage over their land. It is not possible to say at this time what the remedy is, but during the next year I hope to investigate the situation fully in order to make the monument accessible without charge to all who care to see it.

From time to time efforts have been made to save some of the remaining groves of the palms (*Washingtonia filifera*) in southern California by incorporating them within national monument bounds. A drawback has been the widely separate locations of the main stands, but from a botanical standpoint it is hoped that eventually some arrangements can be perfected whereby some of these palms can be placed under Government protection. To this end Representative William Kettner, of California, introduced in Congress, January 15, 1920, a bill (H. R. 11733) "making reservation and withdrawing from settlement, occupancy, or sale and dedicating and setting apart as a national monument a certain tract of land in the county of Riverside, Calif." This proposed monument includes the famous grove of palms in Palm Springs Cañon, about fifty miles from Riverside. It appears, however, that nearly all of the lands are privately owned or the Indians of the region have acquired vested interest therein, and that, as far as these lands are concerned, it would be necessary to obtain the full and free consent of the Indians to the disposition of the lands at a price to be agreed upon. It is to be hoped that some arrangements can be made to purchase the Indian lands, as well as the other private lands, possibly by private contribution, for this region, with its groves of palms and other desert flora, is worthy of preservation as a national monument.

The National Park Service has continued during the year 1920 under the direction of Director Stephen T. Mather, with Mr. Arno B. Cammerer as Assistant Director. On March 8, 1920, Superintendent Horace M. Albright of the Yellowstone National Park was designated field assistant to the director in addition to his other duties. William H. Peters, formerly assistant engineer of the Service, was acting superintendent of Grand Cañon National Park from August 2, 1919, to October 13, 1920, when he became superintendent of Mount Rainier National Park, succeeding Mr. Roger W. Toll, who resigned. Mr. D. L. Raeburn, a former superintendent of Mount Rainier, was appointed superintendent of Grand Cañon National Park in October, 1920. On July 12, 1920, Colonel John R. White was appointed superintendent of Sequoia National Park and acting superintendent of General Grant National Park, filling the vacancy caused by the resignation of Judge Walter Fry, who on July 15th accepted the office of commissioner for these parks under the Department of Justice. Walter W. Payne resigned as superintendent of Glacier National Park, effective June 30, 1920, and was succeeded by George E. Goodwin as acting superintendent in addition to his duties as engineer to the Service.

## FORESTRY NOTES

### RECENT DEVELOPMENTS AFFECTING CALIFORNIA'S FORESTS

BY WALTER MULFORD

Good cheer! Such is the message 1920 leaves for the friends of California's forests. It is probable that the year has marked a decided upward turning-point in the progress of forestry in the country of the sugar-pine and the redwood.

Of first importance is the development of a strong national movement to bring about the practice of forestry on privately owned timberlands. The issue is so fundamental to the American forest, and is so likely to lead to a vigorous contest in Congress in the near future, that a special article is included in this number of the BULLETIN explaining the situation in some detail.

The outstanding local development has been the formation and effective work of a group of men officially representing most of the leading forest interests of the state, who have *worked together* for forestry instead of each going his way in his own corner of the big general forest problem. This California Forestry Committee consists of Donald Bruce, associate professor of forestry in the University of California, chairman; R. E. Danaher, representing the California White and Sugar Pine Manufacturers' Association; G. M. Homans, State Forester; D. A. McAllaster, Land Commissioner of the Southern Pacific Railroad; P. G. Redington, District Forester of the United States Forest Service. A representative of the redwood lumbermen is to be added. The committee has employed Mr. W. C. Hodge, a technically trained forester. Organized in the spring of 1920, the committee has already made substantial progress. It deserves the loyal support of all Californians who believe in trying to settle conflicting interests by working together.

A new State Board of Forestry was created by act of the legislature in 1919, to consist of the State Forester and four persons to be appointed by the Governor, one of whom must be familiar with the timber industry, one with livestock, one with the grain and hay industry, and one at large. The board consists of Dr. George C. Pardee, Oakland, chairman; R. E. Danaher, Camino; Col. Ed. Fletcher, San Diego; G. M. Homans, Sacramento; Solon H. Williams, Yreka. This replaces the former ex-officio board, which consisted of the Governor, the Secretary of State, the Attorney-General, and the State Forester. The new board has recently announced its adoption of the following platform as being of first importance in the development of the state's forest policy: (1) Appropriation by the state legislature of sufficient funds for the prevention and suppression of forest, grain, and pasture fires outside the national forests; (2) Acquirement of logged-off areas, in both the redwood and pine regions, as a nucleus for a series of state forests; (3) Acquirement of watersheds necessary for the conservation of water for domestic and irrigation purposes; (4) Renewal of forests on logged-off areas and watersheds that are in need of reforestation.

The legislature of 1919 passed several measures designed to reduce the forest-fire hazard. It appropriated \$25,000 to the State Board of Forestry for the biennium 1919-1921 for the prevention and suppression of forest fires; the board was authorized to divide the state into districts, employ district fire rangers, and under specified conditions pay fire-fighting expenses. The Penal Code was amended and now requires all gas tractors, oil-burning engines, gas-propelled harvesting machines, and auto-trucks engaged in harvesting or moving grain and hay to be equipped with an effective spark-arrester. In the section regarding leaving camp-fires unextinguished, the phrase "upon departure" was changed to read "without some person in attendance." By a change in the Civil Code the United States is extended the right, heretofore limited to the state and counties, of recovering in a civil action double the damages resulting from fires caused by wilfulness, malice, or negligence, or the actual damage if the fire occurred accidentally, and the full costs incurred in fighting such fires.

A long forward step was taken on October 14 and November 5, 1920, at meetings of the California Forestry Committee, the State Board of Forestry, and a number of leading lumbermen, at which definite plans were formulated for the proper disposal of slash after lumbering.

Some progress is being made in the movement to preserve a number of groves and at least one large forest of the coast redwood north of San Francisco Bay. On May 3, 1920, Congress asked for a report on redwood areas suitable for national parks. At the request of the Secretary of the Interior, a survey was made in the fall of 1920 by the United States Forest Service, under the direction of District Forester Paul G. Redington, traveling expenses incurred in field-work being paid by the Save the Redwoods League. One representative each from the State Forester's office and the Division of Forestry of the University of California assisted in the survey. In the fall of 1920 the Save the Redwoods League was incorporated on a non-profit basis, its purposes being to encourage interest in the redwoods and bring about a better understanding of their value; to promote the establishment of national, state, county, and private redwood parks; to bring into unity of action all interests concerned in preserving the redwoods for scenic, recreational, and economic purposes; to acquire areas of redwood land in order to insure their preservation.

Improper taxation is a close rival to fire in its power to destroy forests. As someone has expressed it, Palestine was fairly well wooded until "the Turk put a tax on the tree." A California forester has been doing notable work in developing federal policies of forest taxation. Called from his professorship of forestry at the University of California in the spring of 1919, Major David T. Mason has been in the federal Treasury Department charged with the responsible and difficult task of determining the federal taxes on the great lumber industry of the nation. The equitable adjustment of income taxes in this industry has peculiar problems, and their wise solution means much to our forests. The work is now well organized, and Major Mason returns to his university duties in January, 1921.

In describing the California White and Sugar Pine Manufacturers' Association in the *SIERRA CLUB BULLETIN* of January, 1918, the statement is made: "Under unscrupulous management, it could be a powerful agent for unneces-



sary forest destruction. In good hands it can be one of the most effective of agents for perpetuating forests by proper use." Happily, and as was expected, the influence of this association has proved to be in the right direction. In 1920 it has been one of the most helpful factors in the work of the California Forestry Committee. It has gone on record in favor of comprehensive slash-disposal law for California, and has indorsed the Gray-Greeley national program for forest legislation, described by Mr. Bruce in this issue. Because of the rapid increase in the number of forest fires immediately after the opening of the deer season, the association is endeavoring to bring about the postponement of the opening date for at least thirty days.

Shortage of fuel oil may mean more forest fires in California in 1921. In recent years the Forest Service has required the use of oil as fuel in all logging engines operating in national forest timber. Because of the shortage in oil supplies, it now appears improbable that this requirement can be continued. Many operators may have to go back to coal or wood, probably the latter, and wood fires in engines are notorious starters of woods fires outside, despite the best spark-arresters yet devised.

Jules Verne once more outdone! The exclamation is trite; the facts are not. Starting on June 1, 1919, as the first organized and sustained airplane forest fire patrol in the United States, and probably the first anywhere in the world, the airplane has taken on additional forest duties in 1920. This season the man-in-the-air has directed the crews at work on big fires, released men to fight on other fronts by patrolling completed fire lines which needed watching to see that the fire did not jump the lines, and met the need for experienced forest officers to lead the crews by moving them in a few hours from a portion of the state then free from fire to strenuous battle-fronts in other localities. In the Palm Cañon fire on the Cleveland Forest the local force attacked at once. But as soon as Supervisor Boulden arrived he took a ship over the fire, mapped out an entirely different campaign, and discharged most of the men. On the 12,000-acre Mill Creek fire on the Lassen Forest a portable radio receiving set was taken to the fire line by pack-horses. Fighting operations were then directed by radio from an airplane, and the same machine also patrolled fourteen miles of completed fire line, calling men to that district only when the line was in danger. In one storm, on August 4, 1920, lightning started more than 230 forest fires on the national forests within eleven counties of northern California. Many fire-fighters were quickly assembled, but the need of trained captains was great. Just then the Stanislaus Forest was quiet. Two trained Stanislaus men at once left Sonora for the landing-field at Coopers-town, were taken by the air patrol to Red Bluff, and sent out in another ship to lead the crews on a serious fire on the Lassen Forest. A few days later the situation changed. There was a break on the Stanislaus, and the men were back within the day.

Nine daily airplane-patrol routes were operated in California during the 1920 fire season. Three operated from Red Bluff: one to Alturas and return, covering the Lassen and Modoc forests and the eastern half of the Shasta; one to Montague and return on the coast slope, over the Klamath and Trinity forests and the western portion of the Shasta; the third patrolled the Cali-



fornia Forest by way of Covelo and Lakeport. One of the two routes starting from Mather Field near Sacramento was to Red Bluff, over the Tahoe and Plumas and portions of the Eldorado and Lassen forests; the other, to Cooperstown, covered portions of the Eldorado and Stanislaus forests. From Fresno one plane operated north to Cooperstown over the Yosemite National Park and portions of the Sierra and Stanislaus forests, and another south to Bakersfield over the Sequoia Forest and the southern portion of the Sierra Forest. From March Field, near Riverside, one route covered the Cleveland and a portion of the Angeles Forest with a landing at San Diego; the other, landing at Santa Barbara, took care of the remainder of the Angeles and the Santa Barbara Forest.

The airplane work has been conducted by the Air Service branch of the army, at the request of and in co-operation with the United States Forest Service. The Forest Service has also continued to maintain regular fire lookout stations on nearly one hundred mountain peaks in California.

\* \*

#### FOREST SERVICE NOTES

*Law Enforcement.*—Some three years ago the California District of the United States Forest Service started a vigorous campaign of law enforcement. Attention was concentrated the first year on fire cases, and the investigation of so many of the man-caused fires as it was possible to handle had such immediate and gratifying results that the activities of the so-called "Arson Squad" were widened, as time went on, to include property, grazing and other trespass, violations of the fish and game laws, etc.

For the calendar year 1920 the Forest Service reports a total of 278 law-enforcement cases. Of these 210 were for fire trespass, and of these 171 resulted in convictions, with fines or settlements of costs and damages totaling \$7307.94.

As a consequence of this activity, incendiary fires at the present rate of decrease should soon be a thing of the past in the California District.

*Air Patrol.*—A total of 26 planes, 29 officers, 15 cadets, and an average of 92 enlisted men constituted the equipment and personnel for this work. In addition, 31 national forest officers participated in the work. During July, August, and September a total of 772 fires were reported by air patrol, and of this number 659 were first so reported. Detection accuracy was 79 per cent.

*Educational Exhibits.*—The year 1920 marks two new departures for the California District of the Forest Service in their educational exhibit work.

The first was the construction (and, later, exhibition at the State Fair, the Fresno District Fair, and the Southern California Fair) of a carefully planned and still more carefully executed replica of a camp-scene with painted background, with a built-up foreground blending imperceptibly into it. The planning, execution, and exhibition were all under the direction of Mr. Paul J. Fair, formerly of the California Academy of Sciences, but now engaged by the Forest Service.

The second departure was active participation in the visual educational work of the public schools. The Forest Service exhibit material was set up in a Los Angeles school and later in the Children's Hour room of the Public Library in San Francisco. At the latter place, and in co-operation with the Board of Education, over 6000 pupils of the sixth, seventh, and eighth grades, San Francisco public schools, visited the exhibit, saw the resources of the national forests, and had explained to them the relation of these resources to the economic life of the people of state and nation.

Present plans contemplate similar exhibits during the early spring, in co-operation with the school boards of Oakland, Alameda, and Berkeley.

\* . \*

#### NOTES OF THE SOUTHERN CALIFORNIA SECTION OF THE SIERRA CLUB

The following officers and members of the Executive Committee for the Southern California Section of the Sierra Club have been elected to serve until November, 1922:

CHARLES J. FOX, Chairman.

MRS. MABELLE MCCALLA STOCKING, Secretary.

BENJAMIN W. FENTON, Treasurer, 949 N. Madison Ave., Pasadena.

GEORGE W. MCDILL, Los Angeles.

ERNEST DAWSON, Los Angeles.

CHESTER VERSTEEG, Los Angeles.

MISS AURELIA S. HARWOOD, Upland.

MISS CARRIE TRACY, Los Angeles.

MISS ALICE BATES, Los Angeles.

The Southern California Section has recently contributed \$50 toward defraying expenses of the recently completed trail at the upper end of Arroyo Seco Cañon back of Pasadena.

The Southern Section is considering taking steps toward making a national monument of Palm Cañon, Andreas Cañon, and other native haunts of the Washingtonia Palm in the foothills of the Colorado Desert in Riverside County. Numerous private holdings are the chief obstacles in the way, as has been pointed out by Mr. Stephen T. Mather. Miss Aurelia S. Harwood, of Upland, California, is chairman of a committee appointed to investigate the whole matter.

PHIL S. BERNAYS

## BOOK REVIEWS

EDITED BY MARION RANDALL PARSONS

**MOUNTAIN MEMORIES\*** Sir Martin Conway, past-president of the English Alpine Club, has written in his *Mountain Memories* the romance of the mountains which always thrills the imagination of the mountaineer. "Thirty years of mountaineering in all parts of the world may well be called a pilgrimage," and the author's subtitle, "A Pilgrimage of Romance," perfectly express the contents of his book.

"Mountaineering" to Sir Martin Conway was an expression of his life, and in writing of the experience which was his life he inevitably develops a philosophy, or, at least, a point of view, which perhaps only mountain-lovers, in whatever degree, can understand with sympathy.

This book is alive with the essential spirit of romance—the allure of the unknown and untried, the subtle charm lent by the imagination, the experiencing of the joy of discovery, which is the experiencing of a beauty first felt in the mind and heart of the discoverer. It is an evanescent spirit, perhaps. Seen too often, Sir Martin's mountains no longer kindle the romantic eagerness; knowledge takes its place—detailed, exact, valuable perhaps, but lacking the lovely colors of the romance-tinted first acquaintance.

Sir Martin in his quest first sought the Alps, then Kashmir and the Himalayas, later Spitzbergen, then the Andes and Fuegia. Everywhere he found the charm and beauty which he craved—and found it because he took it with him in his own heart.

The veteran author's memories are recounted with beauty and vividness, but they are memories which hold alive and bright only the essentials of experience—the happiness, the fancy, the emotion of it. Details of dates, distances, elevations—statistics of mountaineering—are few and incidental. Especially fine are a three-page memoir of A. F. Mummery, "a mountain genius," and the five chapters given to Kashmir and the Himalayas.

The book is splendidly done typographically, and the sixteen full-page illustrations are evidently chosen for their significance.

A. H. A.

**BIRDS IN TOWN AND VILLAGE†** W. H. Hudson's latest book, entitled *Birds in Town and Village*, is written in his usual delightful style. It gives something of the life habits of all the commoner birds of the British Isles—those that one may meet with in his daily walks—while he also includes intimate glimpses of those rarer birds which must be sought in out-

\* *Mountain Memories: A Pilgrimage of Romance*. By SIR MARTIN CONWAY. Funk & Wagnalls Company, New York. 1920. Pages, 282; with 16 full-page plates. Price, \$5.16; charges paid.

† *Birds in Town and Village*. By W. H. HUDSON. With pictures in color by E. J. Detmold. E. P. Dutton & Co., New York. Pages, 322.

of-the-way places. In his rambles he meets many interesting characters and sketches these with no less surety of touch. The bird-catchers include him as one of their own, telling him of their successes, the difficulties of the profession, and how much better it is for the birds! Hudson sees many evidences of the thieving small boy who robs the birds' nests—some for the sake of collecting eggs, others apparently actuated only by the destructive impulse. He feels the need of giving these children more knowledge of the birds, of their usefulness and beauty, thus trying to make of them protectors instead of destroyers of bird life.

He is much interested in the parental instinct shown by our feathered friends—how this prompts them to risk their own lives to protect their young, simulating broken wings and enfeebled condition, thus attracting the intruder's attention to themselves, and, by fluttering, slowly leading him away from the nest. He finds this instinct confined to no one species or order, but in many separate orders, evidenced by certain individual birds, but not by every bird of a species.

He discusses the migratory instinct which impels birds of so many widely varying orders to fly semiannually practically from pole to pole, thus distributing these birds more or less evenly all over the world.

His discussions are not scientific, but perhaps are all the more interesting to the lay-reader because of their general discursiveness. Anyone can enjoy these delightful ramblings through these quaint old English villages.

MARY VAN E. FERGUSON

**ADVENTURES AMONG BIRDS\*** In *Adventures Among Birds* Mr. Hudson paints a series of beautiful word-pictures of his feathered friends. Being neither a sportsman, a collector, nor a photographer of wild life, he has but one aim—to make himself so familiar with the bird in its "wild, free, happy existence" that he may be able to impart to his readers an image, not so much of its physical appearance as of the expression of its inner life as manifested in song, flight, and social habits. These images are interwoven with human experiences and descriptions of scenery which leave an indelible impression on the reader's mind.

With fine descriptive power he paints the wild geese and hooded crows seen at Wells-next-the-Sea, the cuckoos and meadow pipits on the moors in Derbyshire, the nightingales, blackbirds, skylarks, and marsh warblers (the four greatest British songsters) on the green downs in Hampshire and Gloucestershire, the carrion-crows, sparrow-hawks, and long-eared owls on the forest-crowned hills of the Wiltshire downs.

Other chapters especially interesting to the animal psychologist are entitled "Great Bird Gatherings," "Birds in Authority," "Friendship among Animals," and "Bird Music." Many incidents connected with the writer's early life in South America are scattered through the pages of the book.

Most American bird-lovers are in the habit of thinking of England as a haven for wild birds—an indirect result of the system of preserves for the

\* *Adventures Among Birds*. By W. H. HUDSON. E. P. Dutton & Co., New York. 1920. Pages, 314.

exotic pheasant. But, according to Mr. Hudson, England is now but a "glorified poultry-yard" in which the native species are slaughtered as vermin by ignorant gamekeepers, who would even do away with the nightingales on the ground that they disturb the slumbers of the "sacred bird" at night.

The reviewer always finds pleasure and profit in reading Mr. Hudson's books, for he is a naturalist who succeeds in communicating to his readers the thrills he himself experiences in the field.

AMELIA S. ALLEN

MOUNTAIN CRAFT\* This book was obviously prepared before the war, for it is written with a minuteness and thoroughness that could only have been exercised in those days when patience had a chance in the world.

Anyone planning a mountain trip in the Alps, or in any other range where real difficulties of snow and ice or rock-climbing prevail, should consult this book and make careful note of its wealth of suggestions and commit to memory many of its precepts.

The point of view is essentially that of the Alpine climber, however, and the editor often lays emphasis upon matters that climbers in our American mountains either take for granted or ignore. In the Sierra, of course, we are almost entirely free from the dangers of storms and changing weather. Such storms as we have are over so quickly and are of such little consequence that the mountaineer pays little attention to them. But for this very reason a Sierra climber contemplating a trip to any other portion of the world would do well to study particularly the warnings contained in this book.

For its purpose this book is admirable and should be in the library of every mountaineer. Many of the chapters, particularly that on rock-climbing, contain most valuable suggestions applicable to our own mountains. F. P. F.

A TOUR OF  
AMERICA'S  
NATIONAL PARKS†

This is a good book. It will doubtless fulfill the purpose for which it was written—to attract tourists to our national parks. A book with such a purpose should be interesting in substance, racy in style. It is not for the geologist, the botanist, or the mountaineer. It is for Mr. Plain People and Wife who have had a little windfall and wish to know where they can spend the money with most profit and delight. Colonel Reik answers their questions deftly. He shows them a number of good pictures, beginning with a very colorful autochrome. He informs them concerning the hotels, the camps, the trails. He entices them with accounts of glorious waters, soaring peaks, and miraculous geysers. Here a little geology, there a little dendrology—but he will not satisfy the scientist at the risk of wearying the retired banker. As his own style is not that of a Parkman or a Muir, he opens each chapter with a bit of verse and seasons his

\* *Mountain Craft*. Edited by GEOFFREY WINTEROP YOUNG. Charles Scribner's Sons, New York. 1920. Price, \$7.50.

† *A Tour of America's National Parks*. By HENRY OTTREDGE REIK, Lieutenant-Colonel, Medical Corps, United States Army. E. P. Dutton & Co., New York. Price, \$4.00 net.

text with apt quotations. And enclosing all his information and divertisement the author has placed on the inside of the covers duplicate maps of the parks and railway connections—a practical and happy consummation of a very worthy work.

Members of the Sierra Club will derive special pleasure from the introduction, which is written by their fellow-member, Horace M. Albright, who is now director of Yellowstone Park.

C. N. H.

A CITY OF  
CAPRICE\*

The heart thrills to home-made songs even if the singer sing with voice somewhat uncertain. This book of verse should interest every San Franciscan who glances at the table of contents—"Land's End," "New Year's Eve," "Telegraph Hill," "In Sanguinetti's," "The Legend of Tamalpais," etc., etc. The poems are of unequal merit. Three of them, written at Yale, which include a prize poem, might, we think, be omitted with profit. If the author should ever abandon his present tasks for poetry (he is an advertising manager), we suggest that he follow *vers de société*. In lighter vein he is certainly not without charm.

C. N. H.

USEFUL WILD PLANTS  
OF THE  
UNITED STATES AND  
CANADA†

In Charles Francis Saunders' latest book, *Useful Wild Plants*, we find something of a departure from his usual books. Several of those we have seen are delightful ramblings throughout California, making us acquainted with the trees and flowers as we go, or, as in one, a guide-book to the points of interest in California. Here, however, we have a guide-book to the useful and edible plants. He gives us something of the history of these plants—where found, the use made of them by early explorers, and the uses made of them by the Indians. Many a plant which we would pass by unnoticed proves upon expert examination to have been of incalculable value to the native inhabitant. In some plants the tubers are edible, by boiling or baking; in others the seeds are used, being sometimes eaten raw, or in other cases pounded into a flour and made into mush or baked in cakes. Again, we discover many uses for the fruits which have been so little regarded by the white man, or it is the stems and leaves which are of use in the commissary, and last, but not least, the so-called "beverage plants"—and some lively beverages were concocted from these for the delectation of the palate of the red man. Then there were plants used exclusively for medical purposes, first by the natives in the early days, and some of them later to be found in our own *Materia Medica*.

Our only criticism of this delightfully interesting book would be that a complete bibliography should have been added instead of the occasional foot-notes, which make the references difficult to locate.

MARY VAN E. FERGUSON

\* *A City of Caprice*. By NEIL COMPTON WILSON. The Overland Publishing Company, San Francisco.

† *Useful Wild Plants of the United States and Canada*. By CHARLES FRANCIS SAUNDERS. Illustrated by photographs and numerous line drawings by Lucy Hamilton Aring. Robert M. McBride & Co., New York. 1920. Pages, 274. Price, \$3.00 net.

**GOING AFOOT\*** A handbook on how, when, and where to walk. One chapter is devoted to the various mountaineering and walking clubs of America, another to the organization of new clubs. A bibliography of mountaineering journals and books on the open road is appended. M. R. P.

. . .

**WINTER** It is a far cry from Shakespeare to Amy Lowell, from the icicle  
**SPORTS** hanging on the wall to the ski-song of the Braemar postman. Words-  
**VERSE†** worth, defining poetry, says it is emotion remembered in tranquillity.

For the ski-runner, says Walter Pritchard Eaton in his clever introduction, "remembering in tranquillity the emotion of his descent . . . is more likely to burst into laughter than into poetry." Nevertheless, he reminds us, "they have a lonely side, a still, reflective side," not inappropriate to the poet's attention. The work of both familiar and unfamiliar poets is included in this novel collection. M. R. P.

. . .

**GUIDE TO** This little guide-book by Ansell F. Hall introduces the traveler  
**YOSEMITE‡** most charmingly to Yosemite Park. Even its mass of practical information cannot hide Mr. Hall's love for his subject. It includes an account of the origin and early history of Yosemite Valley and Park, and a description of the roads and trails which lead to its most famous features. The trips are described, mileage given, and the estimated number of hours necessary to cover the trip. We recommend the book unreservedly to our members. It is issued in pocket size with durable paper cover. M. R. P.

. . .

**NEW MEXICO,** *New Mexico, the Land of the Delight-Makers* is the title  
**THE LAND OF THE** of a 460-page volume by George Wharton James, whose  
**DELIGHT-MAKERS§** purpose, in his own words, "is to give in readable guise a broad and general idea of the state as a whole, or, at least, of its more important and arresting features." An acknowledgment, in the first paragraph, to Adolph Bandelier for the use of the name "The Delight-Makers," the title given by Bandelier to the novel in which he sets forth the significance of the cliff dwellings of this region and his profound knowledge of the country, people, customs, etc., reduces the shock which one otherwise feels upon finding an apt and well-known title made use of by another author.

The book is one of the "See America First" series, to which James has already contributed a volume on California and one on Arizona. He first visited New Mexico some thirty years ago, "broken," as he says, "in health and spirits," and found in the free and wild life there—the broad expanse of hill and

\* *Going Afoot*. By BAYARD H. CHRISTY. Association Press, New York. 1920. Pages, 148.

† *Winter Sports Verse*. Chosen by WILLIAM HAYNES and JOSEPH LE ROY HARRISON. With an introduction by Walter Pritchard Eaton. Duffield & Co., New York. 1919. Pages, 258.

‡ *Guide to Yosemite*. By ANSELL F. HALL, U. S. National Park Service. Sunset Publishing House, San Francisco. Pages, 98. Price, 50 cents.

§ *New Mexico, the Land of the Delight-Makers*. By GEORGE WHARTON JAMES. Page Company, Boston. Price, \$5.00.



plain, the extremes of heat and cold, wind and weather, the color of its sunrises and sunsets, and the interest in its customs and Indian life, in contrast to its modern cities—an awakening and broadening sense of what life holds for one who has eyes to see.

It is with something of this vision that the author attempts to inspire the reader and to lure him from the commonplace happenings and surroundings of his daily life to this land of constant surprises.

He goes rather broadly into New Mexico's historical beginnings, religion and superstitions, its art, architecture, music, flora, bird life, etc., and closes the volume with a chapter on "Albuquerque, the Commercial Metropolis" and some statistics on population. The descriptions are prolific in adjectives and the book is written in George Wharton James' usual digressive style.

DAISYMAY CAMPBELL HUBER

\* \* \*

The annuals of *Mazama* and *The Mountaineer* maintain their usual high standard. *Mazama* includes articles on Mount Baker, Mount Shuksan, Mount Shasta, Assiniboine, and the Sierra Club outing. *The Mountaineer* is devoted chiefly to Mount Olympus and Mount Anderson.

M. R. P.

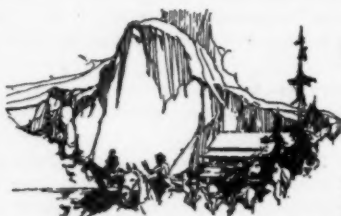
\* \* \*

Publications received too late for review:

*Popular Studies of California Wild Flowers.* By BERTHA M. RICE and ROLAND RICE. Illustrated from photographs. Upton Bros. & Delzelle, San Francisco.

*Cross-Country Skiing.* By ARNOLD LUNN. With diagrams and illustrations. E. P. Dutton Co., New York.

*Members are urged to deal with our advertisers*



## *A Friend on Your Trip*

All the time you're in Yosemite National Park and wherever you may go, Yosemite National Park Company service will be at your disposal. This service is a complete system, including:

Automobiles  
Camping Outfits  
Camp Supplies  
Garage Service

General Store  
Horses  
Hotels  
Hotel Lodges

Hospital Service  
Housekeeping Cottages  
Steam Laundry  
Swimming Pool

and the comforts of baths, hairdressing, manicuring, chiropody and massage. Your patronage is invited.

### YOSEMITE NATIONAL PARK COMPANY

San Francisco  
689 Market Street

YOSEMITE  
CALIFORNIA

Los Angeles  
517 So. Spring St.

## *Members of the Sierra Club Take Notice*



We need Bulletins of  
issues before 1907 to make up parts for  
Libraries. Kindly mail them  
to our office.

*When dealing with our advertisers mention the Bulletin*

on

b

e in  
Park  
may  
e at  
ing:

es

ing,

es  
g St.